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NATOUSA CIRCULAR LETTERS

MEMO FOR RECORD

(Do not detach from file)

This file item, or portions thereof as indicated below, has been indexed for inclusion in Departmental Records Branch Describable Item Index:

DATE	INDEXER
8 July 1953	Catherine Harrison

TAGO FORM 01352 *(Formerly AGO)*
1 FEB 49

J54699

A M G

H E A D Q U A R T E R S

A D J U T A N T ' S O F F I C E

N A T O U S A
C I R C U L A R L E T T E R S

SUBJECT

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CIRCULAR LETTER NO. 46

CIRCULAR LETTER NO. 48

CIRCULAR LETTER NO. 49

CIRCULAR LETTER NO. 51

Tentative Changes In Medical Department Equipment Lists

CIRCULAR LETTER NO. 48

CIRCULAR LETTER NO. 49

CIRCULAR LETTER NO. 51

Tentative Changes In Medical Department Equipment Lists

CIRCULAR LETTER NO. 53

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

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31 December 1943

CIRCULAR LETTER NO. 53

I CHANGES IN CHEST M.D. #60 (ITEM 95025)

Attention is directed to Medical Department Supply Catalogue Change #3, 1943, which directs the following changes in Chest M.D. #60:

a. Deletions:

11570	CREOSOTE USP:	OZ	1
53910	LANCET, VOLLAND, NO. 2:	EA	1
55900	STRIP, POLISHING, COARSE:	BOX	1
97515	STERILIZER, HYPODERMIC NEEDLE:	EA	1

NOTE: Items 51325 to 51355 inclusive are not included in the contents of this chest, as they are now "Issue While In Stock".

b. Additions:

11400	CHROMIUM TRIOXIDE, USP:	OZ	1
33365	KNIFE, OPERATING, HANDLE NO. 3:	EA	1
33370	KNIFE, OPERATING, DET. CHANGEABLE BLADE NO. 11:	PKG	1
52495	CHISEL, OSSEOUS, STOUT, NO. 2:	EA	1
52465	ELEVATOR, STOUT, "A":	EA	1
52570	MACHINE, FOOT, CORD:	EA	1
55410	SCALER, NO. 3:	EA	1

c. Increase the quantity of the following items to the amounts as indicated:

12830	MERCURY, USP:	LB	2
13935	PROCAINE HYDROCHLORIDE, CARTRIDGE 2%, 2.2 cc:	BOX	5
50020	ALLOY, 1 OZ:	BTLE	4
50350	BUR, NO. 2, ANGLE HANDPIECE:	PKG	3

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50360	DUR, NO. 4, ANGLE HANDPIECE:	PKG	3
50440	DUR, NO. 37, ANGLE HANDPIECE:	PKG	3
50450	DUR, NO. 39, ANGLE HANDPIECE:	PKG	3
50520	DUR, NO. 557, ANGLE HANDPIECE:	PKG	2
50630	DUR, NO. 2, STRAIGHT HANDPIECE:	PKG	3
50640	DUR, NO. 4, STRAIGHT HANDPIECE:	PKG	3
50720	DUR, NO. 37, STRAIGHT HANDPIECE:	PKG	2
50830	DUR, NO. 556, STRAIGHT HANDPIECE:	PKG	2
52610	ENGINE, HANDPIECE, ANGLE: (SCRIOT)	EA	2
54260	FILES, NO. 2, DRESSING:	EA	2
Form 79-REGISTER OF DENTAL PATIENTS (CARD):		EA	500

II AUTOCLAVE, LABORATORY, FIELD (ITEM 94010)

a. Item 94010, Autoclave, Laboratory, Field is an item of Equipment for clearing companies since it is part of Chest, ID No. 5.

b. A new model has been received which will be substituted for the old model as soon as possible. Each unit having old model will requisition new model.

III RETENTION OF SUPPLIES IN EXCESS OF MED. DEPT. EQUIPMENT LISTS.

a. All medical supplies rendered excess by the amendment or publication of new Medical Department Equipment Lists will be retained by the unit concerned as overissue unless otherwise directed by this office.

b. Amendments to Table of Equipment will not alter the current status of Medical Department Equipment Lists.

IV PROFESSIONAL LITERATURE

a. It is desired that each medical unit submit to this office without delay through technical channels a list of professional books which would make desirable additions to their library.

b. Base Section Surgeons will circularize all medical journals received from this headquarters among all medical units within the respective Base Sections.

V USE OF (SHELL NITRON), CARBON DIOXIDE ABSORBENT.

a. It has come to the attention of this office that Item 1K7485O (Shell Nitron) Carbon Dioxide Absorbent is being used in Anesthesia Apparatus. This dangerous procedure will be discontinued immediately.

b. Shell Nitron is intended for use with Item 93640, OXYGEN THERAPY APPARATUS, CLOSED-CIRCUIT. Under no circumstances will it be employed with any Anesthesia Apparatus.

VI STORAGE OF BIOLOGICAL PRODUCTS.

All biological items in the Medical Supply Catalog require special care in storage and should be stored as indicated in the following table. Diagnostic and therapeutic sera must be held in temperatures not to exceed 42 degrees Fahrenheit.

Extensions of the expiration dates which are given are predicated upon the fact that the products have been stored at the indicated temperatures. Any Medical Unit which becomes or sees in which the storage provisions as outlined below have not been observed will immediately destroy them and the fact of such destruction will be reported to the Medical Supply Depot serving the unit, stating quantities so destroyed. These items carry an expiration date and under proper conditions of storage the items are usable beyond the expiration date as indicated.

Item No.	Description	Temperature to be stored. Ideal Temperature	Not higher than	Days usable beyond expiration Date
15965	LIVER PURIFIED EXTRACT	34°F	42°F	60 days
15840	ANTIANTHRAX Serum, HORSE, LYOPHILIZED 50 cc:	34°F	42°F	30 days
15850	ANTITOXIN, DYSENTERY, POLYVALENT, SHIG.. 20,000 UNITS:	34°F	42°F	30 days
15900	ANTI-ENCOCCOCCIC SERUM 20 cc:	34°F	42°F	30 days
15940	ANTIPNEUMOCOCCIC SERUM TYPING POLYVALENT:	34°F	42°F	30 days
15942	ANTIPNEUMOCOCCIC SERUM TYPING POLYVALENT:	34°F	42°F	30 days
15950	ANTIPNEUMOCOCCIC SERUM TYPING MIXTURE:	34°F	42°F	30 days.
15952	ANTIPNEUMOCOCCIC SERUM TYPING PICTURE:	34°F	42°F	30 days
16002	ANTIPNEUMOCOCCIC SERUM TYPE I 50,000 UNITS:	34°F	42°F	30 days
16005	ANTIPNEUMOCOCCIC SERUM TYPE II 50,000 UNITS:	34°F	42°F	30 days
16007	ANTIPNEUMOCOCCIC SERUM TYPE III 50,000 UNITS:	34°F	42°F	30 days
16008	ANTIPNEUMOCOCCIC SERUM TYPE V 50,000 UNITS:	34°F	42°F	30 days
16009	ANTIPNEUMOCOCCIC SERUM TYPE VII, 50,000 UNITS:	34°F	42°F	30 days
16011	ANTIPNEUMOCOCCIC SERUM TYPE VIII, 50,000 UNITS:	34°F	42°F	30 days
*16015	CHOLERA VACCINE, 20 cc:	34°F	42°F	60 days
16018	DIPHTHERIA, ANTITOXIN, USP 1,000 UNITS:	34°F	42°F	30 days
16020	DIPHTHERIA, ANTITOXIN, USP 20,000 UNITS:	34°F	42°F	30 days
16030	DIPHTHERIA, TOXIN-SCHICK TEST MATERIAL:	34°F	42°F	30 days
16040	DIPHTHERIA TOXOID, USP, ALUM PRECIPITATED:	34°F	42°F	60 days
16041	DIPHTHERIA, TOXOID PLAIN:	34°F	42°F	60 days
16050	GAS GANGRENE, CL PERFR, POLY V/O TETANUS ANTITOXIN:	34°F	42°F	No extension
*16070	PLAGUE VACCINE, 20 cc:	34°F	42°F	60 days
16075	POISON IVY EXT, INJ, THERAPEUTIC 5 cc	34°F	42°F	90 days
16076	POISON OAK EXT, INJ, THERAPEUTIC 5 cc	34°F	42°F	90 days
16081	SCARLET FEVER, STREPTOCOCCUS ANTITOXIN, THERAPEUTIC, USP:	34°F	42°F	30 days
16082	SCARLET FEVER, STREPTOCOCCUS, TOXIN, FOR DICK TEST, USP:	34°F	42°F	30 days
16083	SCARLET FEVER, STREPTOCOCCUS, TOXIN, USP:	34°F	42°F	30 days

Item No.	Description	Temperature to be stored.		Days usable beyond expiration Date
		Ideal Temperature	Not higher than	
16084	SERUM, GROUPING, BLOOD, ANTI-A (GROUP 3):	34°F	42°F	Keep as long as laboratory tests show O.K.
16085	SERUM, GROUPING BLOOD, ANTI-A (GROUP 3):	34°F	42°F	
16086	SERUM, GROUPING BLOOD, ANTI-B, (GROUP 2):	34°F	42°F	
16087	SERUM, GROUPING BLOOD, ANTI-B, (Group 2):	34°F	42°F	
16090	SMALLPOX VACCINE, USP:	34°F	42°F	
16110	TETANUS, ANTITOXIN, 1,500 UNITS IN VIAL:	34°F	42°F	No extension
16120	TETANUS, ANTITOXIN, 20,000 UNITS:	34°F	42°F	30 days
16125	TETANUS, TOXOID PLAIN:	34°F	42°F	30 days
16127	TETANUS, TOXOID PLAIN:	34°F	42°F	60 days
*16128	TYPHUS VACCINE, 20 cc:	34°F	42°F	90 days
*16129	YELLOW FEVER VACCINE (SINGLE DOSES):	34°F	42°F	60 days
*16136	ANTHRAX VACCINE, 50 cc:	28°F	28°F	No extension
16137	ANTHRAX SERUM, 100 cc:	34°F	42°F	60 days
16150	TETANUS TOXOID, PLAIN (FOR VETERINARY USE):	34°F	42°F	30 days
17000	ADSORPTOR, ANTISHEEP, HEMOLYSIN 5 cc:	34°F	42°F	60 days
17015	ANTIGEN, BACT. AGGLUTINATION TESTS, 5 cc:	34°F	42°F	No exp.date
17020	ANTIGEN, SYPHILIS COMPLEMENT FIXATION TESTS 5 cc:	34°F	42°F	60 days
17030	ANTIGEN, RAPID TEST 50 cc:	Room Temperature		90 days
17035	ANTIGEN, LYMPHOGRANULOMA VENEREUM, FROM CHICK EMBRYO (FREI TEST AND CONTROL):	Room Temperature		90 days
17034	COMPLEMENT, FIXATION TEST, LYOPH., GUINEA PIG, 5 cc:	34°F	42°F	30 days
17050	SERUM, AGGLUTINATING, DIAGNOSTIC, 1 cc:	34°F	42°F	No exp.date
*17300	VACCINE, TRIPLE TYPHOID, PROPHYLACTIC:	34°F	42°F	90 days
17323	ANTIGEN, BOVINE BRUCELLOSIS, ABORTION, 20 cc:	34°F	42°F	60 days
17330	ANTIGEN, GLANDERS, 30 cc:	34°F	42°F	60 days
17340	ANTIGEN, INFECTIOUS, ABORTION, 30 cc:	34°F	42°F	60 days
17350	[illegible], ENTERITIDIS:	34°F	42°F	60 days
17370	[illegible] INTRADERMIC:	34°F	42°F	90 days
17393	[illegible], BRUCELLO-ENCEPHALOMYELITIS, BOVINE, 20 cc:	34°F	42°F	No extension
17395	[illegible], BOVINE, INFECTIOUS ABORTION, 20 cc:	34°F	42°F	No extension
NS-1	ANATOXIN, 1,000 UNITS, 100 UNITS PER 10 cc:	34°F	42°F	60 days
NS-1	RABIES VACCINE, 20 cc:	34°F	42°F	No extension
NS-1	SOLUTION, POTASSIUM PERMANGANATE:	34°F	42°F	60 days
NS-1	ROLLER, ANTHRAX:	Room Temperature		90 days

* These vaccines may be held at temperatures up to 85 degrees Fahrenheit for periods not to exceed 10 days if the vaccines are consumed immediately following this period.

** Under no circumstances will Yellow Fever Vaccine be stored at temperatures in excess of 28 degrees Fahrenheit. It will be warmed to room temperature just prior to injection.

VII TENTATIVE CHANGES IN TABLES OF EQUIPMENT

a. The following tentative change in Table of Equipment is authorized in letter No., NATOUSA to C.G., S.O.S., NATOUSA dated 11 October 1943, file AG 320.3/112 S-C, subject: T/E 8-18:

T/O and E 8-18 dated 15 July 1943 - CLEARING COMPANY, MEDICAL BATTALION.

ADD: 95026 - CHEST M.D. No. 61: Each 1
95027 - CHEST M.D. No. 62: Each 1

b. The following tentative changes in Tables of Equipment are authorized in letter No., NATOUSA to C.G., S.O.S., NATOUSA dated 17 October 1943, file AG 440/135 SUBC-C, subject: Tentative Changes in T/O and E:

T/O and E 8-18 dated 15 July 1943 - CLEARING COMPANY, MEDICAL BATTALION.
T/O and E 8-28 dated 20 May 1943 - CLEARING COMPANY, SEPARATE.
T/O and E 8-37 dated 2 May 1943 - COMPANY, MEDICAL BATTALION, ARMORED DIVISION.

ADD: 43170 - FLUOROSCOPE, DARK FIELD APPARATUS, COMPLETE: Each 2
94095 - CHEST, LABORATORY, FIELD: Each 2

For the SURGEON:

E. STABLER
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:
Surgeon, NATOUSA - 400
Surgeon, NAASC - 300
Surgeon, ETO - 400
Surgeon, MTO - 300
Surgeon, NATS - 150
Surgeon, PTO - 100
Surgeon, PBS - 500
Surgeon, ASTOT - 25
Surgeon, CBI TSC - 50
Surgeon, Seventh Army - 350
Surgeon, FIFTH Army - 600
Surgeon, H. , Command, AF - 50
Surgeon, NATOUSA - 200

Folder 868

HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

31 December 1943

CIRCULAR LETTER NO. 52

SUBJECT: Publication of articles by Medical Department personnel.

1. Reference is made to AR 40-1005, Section II, C.3. No. 2, 14 April 1941, Section I, War Department Circular 331, 14 September 1942, and War Department Circular No. 337, 7 October 1942.

2. All articles prepared by officers and enlisted personnel of the Medical Department for publication will be submitted through technical channels to The Surgeon General's Office, accompanied by a letter requesting authority for publication or presentation. Each article will be accompanied by a separate letter. If an author so desires, The Surgeon General will forward an article directly to the editor for publication, provided the author specifies the journal and provided the article is approved. Arrangements for reprints must be made directly by the author with the publisher and at no expense to the Government.

3. The publication of results of clinical observations in the Army is encouraged. Accounts of military medical experience, especially in theaters of operation, are desired for inclusion in the Bulletin of the U. S. Army Medical Department. Owing to the shortage of paper, reviews which do not improve upon available publications and reports which deal with small numbers of cases of common conditions are discouraged.

4. Attention is directed to the following requirements for the submission of articles for approval:

a. Two copies of the article (one of which must be an original) and of all illustrations will be submitted. The article will be typed with double spacing throughout and the pages numbered consecutively.

b. The author's military title, including grade and corps, will be given, but specific military assignments, academic degrees, and society memberships will not be included. Previous civilian positions may be indicated in a footnote; e.g., "Professor of Medicine, Blank University, on leave of absence." The author's military address will not be published. The names of superior officers who are not concerned in the authorship will not be mentioned.

c. Articles based, wholly or in part, on observation made at civilian institutions before the author entered active military service should be indicated as such by a footnote.

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5. Authors will be guided by the following policies in the preparation of articles for publication:

a. Articles will not be approved if they contain material which is:

(1) Contrary to G.O. No. 62, 1919, or paragraph 8, AR 310-10.

(2) Not in accord with the facts or established principles of medical science.

(3) Contrary to the policies of The Surgeon General in regard to professional practices.

(4) Capable of being interpreted as representing, without authority, the official policy of the Army.

(5) Harmfully critical of an agency of the United States or its allies.

(6) Malicious, trivial, or in conflict with the rules of medical ethics.

b. The language should conform to a good standard of English, especially as to clarity and conciseness.

c. Neither adverse criticism nor praise of individuals in the service is considered proper.

d. Identification of patients by means of names, initials, Army serial numbers, or hospital numbers will be avoided.

e. Army abbreviations not in common use in civil life should not be used; e.g., "C.D.D." Terms which have special meanings in military use should be explained; e.g., "disposition" and "classification."

f. Conclusions should be based upon the data presented in the article.

g. Tables, charts, and illustrations, should be numbered separately on separate pages and supplied with adequate headings and legends.

h. Specific references should be made to pertinent previous studies. References not used in the preparation of the text or not read by the author will not be included. If an original reference has not been read by the author but is obtained from another source, it will be so indicated and the source quoted. The reference will include the author's name, the title of the article, and the volume, page, and date of the publication; in the case of books, the publisher and place of publication should be added. The bibliography will be arranged in alphabetical or chronological order or in the order in which references occur in the text.

6. Articles will not be published unless approved by the Office of The Surgeon General and by the Bureau of Public Relations, War Department, Washington, D. C. When publication or presentation is authorized, a letter will be sent to the senior author, but no reference to such authorization will be published. If an article is not approved, it will be returned through channels to the senior author. If approval is withheld for needed revision, this will be indicated. Following revision, the article should be resubmitted.

For the SURGEON:

E. STADDEN,
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:

Surgeon, NAAF	- 400
Surgeon, NAASC	- 300
Surgeon, PBS	- 400
Surgeon, IBS	- 300
Surgeon, ABS	- 150
Surgeon, IBS	- 100
Surgeon, PBS	- 500
Surgeon, AFOT	- 25
Surgeon, CO NBS	- 50
Surgeon, Seventh Army	- 350
Surgeon, Fifth Army	- 600
Surgeon, H. Command, AF	- 50
Surgeon, NATOUSA	- 200

Dist. Adm Div - 5
Col Clough - 1
Capt Price - 2
Reg I - 3
Reg II - 3
Files - 2
Spare - 11

R E S T R I C T E D
(Expands British Restricted)

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H E A D Q U A R T E R S
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

Files

30 December 1943

CIRCULAR LETTER NO. 51

Tentative Changes in Medical Department Equipment Lists

CONVALESCENT HOSPITAL, CZ, (2000 BED) I
GENERAL HOSPITAL, CZ, (1000 BED) II
EVACUATION HOSPITAL (750 BED) III
EVACUATION HOSPITAL, SEMI-MOBILE, (400 BED) IV
FIELD HOSPITAL (400 BED) V
STATION HOSPITAL, CZ, (750 BED) VI
STATION HOSPITAL, CZ, (500 BED) VII
STATION HOSPITAL, CZ, (250 BED) VIII

The following tentative changes in Medical Department equipment lists are authorized and published herein for the information and guidance of all concerned. Attention is directed to Circular Letters No. 31 and 40 for previously authorized changes.

I CONVALESCENT HOSPITAL, CZ, (2000 BED) T/E 8-500 - 1 April 1942.
(Med. Dept. Equip. List No. 37215 dated 1 June 1943)

Basic Equipment Lists of Convalescent Hospitals, CZ, (2000 bed) are authorized to include the following items in addition to present allowances:

17030	ANTIGEN FOR KAHN TEST, 50 cc	Bottle	1
40530	BOTTLE, MADROX MOUTH, 1 LITER	Each	1
40562	BOTTLE, SCREW NECK, WITH CAP, Vial Type, 9 cc	Each	100
43720	PIPETTE, SEROLOGICAL, 1-10 cc	Each	22
43740	PIPETTE, SEROLOGICAL, 5 cc	Each	4
44302	TEST, FUEL ANTIGEN, Kahn	Each	4
44304	TEST TUBE, (KAHN PRECIPITIN)	Each	200
44430	THERMOMETER, CLINICAL, RANGE 100 to PLUS 110° C	Each	2
41390	CENTRIFUGE, ELECTRIC, SMALL	Each	1
44405	TEST TUBE RACK (KAHN PRECIPITIN)	Each	2
94420	WATER BATH, SEROLOGICAL, 1920 Fixed Model	Each	1
94424	WATER BATH, SEROLOGICAL, 1920 Fixed Model, TEST TUBE RACK	Each	2
92090	BLANKET, C.D.	Each	6000

II GENERAL HOSPITAL, CZ, (1000 BED) T/E 8-550 - 19 March 1943.-
(Med. Dept. Equip. List No. 37235 dated 1 May 1943)

Basic Equipment Lists of General Hospitals, CZ, (1000 bed) are authorized to include the following items in addition to present allowances:

30562	BRONCHOSCOPE, 6mm x 40cm, FULL LENGTH, ASSORTED	Each	3

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32282	FORCEPS, FORWARD GRASPING	Each	2
32442	FORCEPS, LARYNGEAL, CUP, LARGE, STRAIGHT	Each	2
32444	FORCEPS, LARYNGEAL, CUP, MEDIUM, ANGULAR	Each	2
32694	FORCEPS, TISSUE SPECIMEN, SQUARE END	Each	2
35502	TUBE, ASPIRATING, BRONCHIAL, LARGE, CURVED	Each	4
35503	TUBE, ASPIRATING, BRONCHIAL, LARGE, STRAIGHT	Each	4
38547	TOOL, CLEANING	Each	4
38680	WIRE, CLEANING	Coil	12

III EVACUATION HOSPITAL (750 BED) T/E 8-580 - 23 April 1943.
(Med. Dept. Equip. List No. 97225 dated 1 July 1943)

Basic Equipment Lists of Evacuation Hospitals (750 Bed) are authorized to include the following items in addition to present allowances:

30090	BLOCK, BITE, ADULT	Each	4
30545	BRONCHOSCOPE, 6mm x 40 cm, ADULTS	Each	1
30562	BRONCHOSCOPE, 6mm x 40cm, FULL LUMEN, ASPIRATING	Each	3
30705	CARRIER, SPONGE, CHILD	Each	2
32282	FORCEPS, FORWARD GRASPING	Each	2
32442	FORCEPS, LARYNGEAL, CUP, LARGE, STRAIGHT	Each	2
32444	FORCEPS, LARYNGEAL, CUP, MEDIUM, ANGULAR	Each	2
32691	FORCEPS, THROAT	Each	4
32694	FORCEPS, TISSUE SPECIMEN, SQUARE END	Each	1
35502	TUBE, ASPIRATING, BRONCHIAL, LARGE, CURVED	Each	2
35503	TUBE, ASPIRATING, BRONCHIAL, LARGE, STRAIGHT	Each	2
38547	TOOL, CLEANING	Each	2
38680	WIRE, CLEANING	Coil	6
70060	END ADJUSTABLE	Each	5
71607	MATTRESS, INNERSPRING (HOSPITAL BED)	Each	5
73755	REFRIGERATOR, MECHANICAL: electric for blood bank	Each	1
96175	X-RAY FIELD UNIT, WITH DARKROOM	Each	1

IV EVACUATION HOSPITAL, SEMIMOBILE (400 BED) T/E 8-581- 26 July 1943.
(Med. Dept. Equip. List No. 97223 dated 1 June 1943)

Basic Equipment Lists of Evacuation Hospitals, Semimobile (400 Bed) are authorized to include the following items in addition to present allowances:

30090	BLOCK, BITE, ADULT	Each	3
30545	BRONCHOSCOPE, 6mm x 40cm, ADULTS	Each	1
30562	BRONCHOSCOPE, 6mm x 40cm, FULL LUMEN, ASPIRATING	Each	1
30705	CARRIER, SPONGE, CHILD	Each	1
32282	FORCEPS, FORWARD GRASPING	Each	1
32442	FORCEPS, LARYNGEAL, CUP, LARGE, STRAIGHT	Each	2
32444	FORCEPS, LARYNGEAL, CUP, MEDIUM, ANGULAR	Each	2
32691	FORCEPS, THROAT	Each	3
32694	FORCEPS, TISSUE SPECIMEN, SQUARE END	Each	1
33440	KNIFE, BRONCHOSCOPIC, (PACKED IN METAL CASE)	Each	12
33450	LARYNGOSCOPE, ADULT	Each	2
35485	TUBE, ASPIRATING, 50cm	Each	2
35502	TUBE, ASPIRATING, BRONCHIAL, LARGE, CURVED	Each	2
35503	TUBE, ASPIRATING, BRONCHIAL, LARGE, STRAIGHT	Each	2

	35500	TUBE, ASPIRATING, OPT' END, WARING STOP AT 40cm	Each	2
	38647	TOOL, CLEANING	Each	2
	38680	WIRE, CLEANING	Coil	6
	73755	REFRIGERATOR, MECHANICAL: electric for blood bank	Each	1
	95026	CHEST, I.D. NO. 61	Each	1
	95027	CHEST, M.D. NO. 62	Each	1
	96175	X-RAY FIELD UNIT, TENT, complete	Each	1

V FIELD HOSPITAL (400 BED) T/E 8-510 - 20 September 1943.
(Med. Dept. Equip. List No. 97227 dated 12 October 1943)

Basic Equipment Lists of Field Hospitals (400 Bed) are authorized to include the following items in addition to present allowances when attached to Army only:

		Per Platoon		Per Hospital	
73755	REFRIGERATOR, MECHANICAL: electric for blood bank	Each	1	Each	3
95317	LAMP, OPERATING, FIELD, GASOLENE	Each	1	Each	3

VI STATION HOSPITAL, CZ. (750 BED) T/E 8-560 - 2 January 1943.
(Med. Dept. Equip. List No. 97325 10 May 1943)

Basic Equipment Lists of Station Hospitals, CZ, (750 Bed) are authorized to include the following items in addition to present allowances:

43330	COID, CASTING, SADDLE BAR & CLASP	Ingot	10
53493	HAMMER, BALL PEIN	Each	1
53720	KNIFE, SPATULA	Each	1
54350	PLIERS, ORTHODONTIA BAR	Each	1
56150	TORCH, FLUX	Each	1
56340	TRAY, DENTAL	Roll	1

Allowances of the following items now appearing in above equipment lists are altered as indicated. The quantity in the amount column below will prevail as basis of issue.

44510	TRAY, DENTAL	Each	1
50110	ARTICULATOR, GOTH & HEDGE	Each	2
52880	FILE, GOLD, FLAT	Each	1
53105	FORCEPS, ARTERY type	Each	5
53270	FORCEPS, DRESSING	Each	1
53360	GOLD, INGOT, BAR, DENTAL, 1 DWT, 20 GR	Each	4
53370	GOLD, PLATE, 22 K, 5 DWT	Plate	3
53380	GOLD, PLATE, 24 K, 5 DWT	Plate	3
53390	GOLD, SOLDER, 16 K	DWT	10
53430	GOLD, SOLDER, 18 K	DWT	30
53410	GOLD, SOLDER, 20 K	DWT	5
53470	GOLD, WIRE, 18G, ROUND	4 DWT	20
53593	SCALES, GOLD, UNIVERSAL	Each	1
55710	SPATULA, WAX	Each	2
56220	TRAY, CROWN & BRIDGE	Each	1
56640	VULCANIZER, FLASK, SCREWLESS	Each	2
99010	ACETYLENE UNIT, CYLINDER, FIELD	Each	1

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VII STATION HOSPITAL, CZ, (500 BED) T/E C-560 - 5 January 1943.
(Med. Dept. Equip. List No. 97343 dated 15 May 1943)

Basic Equipment Lists of Station Hospitals, CZ, (500 Bed) are authorized to include the following items in addition to present allowances:

30562	BRONCHOSCOPE, 6mm x 40cm, FULL LENGTH, ASPIRATING	Each	1
30705	CARRIER, SPONGE, CHILD	Each	1
32282	FORCEPS, FOREIGN BODY, ADULT	Each	1
32442	FORCEPS, LARYNGEAL, CUP, LARGE, STRAIGHT	Each	1
32444	FORCEPS LARYNGEAL, CUP, MEDIUM, STRAIGHT	Each	1
32694	FORCEPS, TISSUE SPECIAL, SQUARE END	Each	1
35465	TUBE, ASPIRATING, 50cm	Each	1
35502	TUBE, ASPIRATING, BRONCHIAL, LARGE, CURVED	Each	1
35503	TUBE, ASPIRATING, BRONCHIAL, LARGE, STRAIGHT	Each	2
35508	TUBE, ASPIRATING, CHEST END, TAPERING STOUT 40cm	Each	2
35627	CORD, ELECTRIC, FOR DIAGNOSTIC APPLIANCES	Each	1
38547	TROCAR, CLEANING	Each	1
38860	TUBE, CLEANING	Each	2
		Coil	6

VIII STATION HOSPITAL, CZ, (250 BED) T/E C-590 - 26 December 1942.
(Med. Dept. Equip. List No. 97340 dated 15 May 1943)

Basic Equipment Lists of Station Hospital, CZ, (250 Bed) are authorized to include the following items in addition to present allowances:

53330	CORD, CASTING, SADDLE BAR & CLASP	Instr	10
53493	CASE, FULL PET	Each	1
53720	KNIFE, OPTICS	Each	1
54350	PLIERS, LINGUAL BAR	Each	1
56150	TWEEZERS, FLASK	Each	1
56340	WAX, MODEL	Roll	1

Allowances of the following items now appearing in above equipment Lists are altered as indicated. The quantity in the amount column below will prevail as basis of issue.

44510	THERM, HIGH	Each	1
50430	ACCUMULATOR, CROWN & BRIDGE	Each	2
52600	FILE, GOLD, FLAT	Each	1
53135	FLASK, SWAGER TYPE	Each	5
53270	PAN, MELTING	Each	1
53280	GOLD, LINGUAL BAR, METRIC, 1 DWT, 20 GR	Each	4
53370	GOLD PLATE, 22K, 5 DWT	PIECE	3
53380	GOLD PLATE, 24K, 2 DWT	PIECE	3
53390	GOLD, SOLDER, 16K	DWT	15
53400	GOLD, SOLDER, 18K	DWT	30
53410	GOLD, SOLDER, 20K	DWT	5
53460	GOLD, WIRE, 18G, ROUND	4 DWT	20
55593	SCISSORS, CASTS, UNIVERSAL	Each	1
55710	SPATULA, 6"	Each	2

56220	TRAY, CROWN & BRIDGE	Each 1
56640	VULCANIZER, FLASK, COMPRESS	Each 2
99010	ACETYLENE UNIT, CYLINDER, FILLED	Each 1

For the SURGEON:

E. STRIBLEE
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:

Surgeon, NAAF	- 400
Surgeon, NATOUSA	- 300
Surgeon, EBS	- 400
Surgeon, PBS	- 300
Surgeon, ABS	- 150
Surgeon, IBS	- 100
Surgeon, PBS	- 500
Surgeon, AFHQ	- 25
Surgeon, CB MBS	- 50
Surgeon, Seventh Army	- 350
Surgeon, Fifth Army	- 600
Surgeon, Hq. Command, AF	- 50
Surgeon, USFOA	- 200

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(Equals British Restricted).

HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

30 December 1943

CIRCULAR LETTER No. 50

SUBJECT: Morphine.

The following observations are set down with a view to bringing the use of this agent better into line with the facts known about it.

1. Administration.

a. Dosage.

(1) Nearly the maximum analgesic effect of morphine is produced by smaller doses than generally supposed: Morphine gr. ¼ (15 mgm.). Larger doses chiefly cause undesirable side effects. They impair the body's power to overcome whereas sometimes.

(2) Usually morphine is not to be administered in greater than gr. ¼ (15 mgm.) single dose. Use only small doses in patients to be transported by air, gr. 1/8 (8 mgm.) to gr. 1/6 (10 mgm.). Respiratory depression here is particularly undesirable (Allay apprehension and fear of first flight with barbiturates).

b. Route.

Subcutaneous or intramuscular injection is employed when a gradual, prolonged effect is sought. This route is preferable when the peripheral circulation is slowed by cold or low blood pressure (See discussion below of delayed morphine poisoning in battle field casualties). A better choice in such cases is intravenous injection. This is best route also when immediate pain relief is wanted, or when delayed absorption might prove harmful as in anticipation or developing shock. When injection is impossible (no syringe) morphine gr. ¼ (15 mgm.) may be held under the tongue until it is dissolved.

2. Indications.

To relieve severe pain only. Use aspirin or codeine for mild pain. In the absence of respiratory depression, head or chest wounds do not contraindicate the use of small doses of morphine, if these or associated wounds cause pain.

3. Contraindications.

a. Morphine will not be used as a sedative in manic or hysterical states, for allaying fear, for promoting sleep (unless pain is present). Such use must not

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be defended. For these conditions better agents are available (phenobarbital or pentobarbital sodium or paraldehyde).

b. Morphine will be avoided (except where pain is present) as a routine agent in the preanesthetic medication of seriously wounded patients. Anesthesia is usually easy to induce in them, in any case.

c. Morphine will not be administered in the field to a patient who must walk back to the aid post. At the aid post it will not be given to the wounded man who must at once be evacuated to the rear as "walking wounded". Such may become confused, lie down along the evacuation route, and go to sleep.

d. Morphine is contraindicated in shock unless pain is present. (See description below of effects morphine has on the respiration, circulation and fluid balance.)

e. Morphine is widely recognized to be dangerous in conditions of low metabolism, as in hypothyroidism.

f. Morphine is largely destroyed in the liver; therefore it should be used with great caution, if at all, in the presence of liver disease, as infectious jaundice.

g. Morphine will be used with great caution, if at all, when minor degrees of anoxia might be dangerous, as in circulatory impairment, or when the respiration is already impaired, as by pneumothorax, hemothorax, or pleural effusion.

4. Poisoning.

This is first characterized chiefly by slow respiration and pin-point pupils. The outstanding serious effect of overdosage with morphine is respiratory depression with anoxia. This is followed by circulatory failure. Less severe poisoning than the above, even therapeutic doses, often complicate treatment of the patient: morphine, in causing anorexia, nausea and vomiting, limits the intake of food and fluids by mouth and increases fluid loss in vomitus and sweat. Severe constipation is produced.

5. Delayed morphine poisoning in battle casualties.

a. When the peripheral circulation is sluggish or inactive, as it may be in patients who are chilled or who have low blood pressure, subcutaneous injections of drugs are poorly absorbed. This was frequently observed to be the case in the Italian campaign. Subcutaneous injection of morphine, under such circumstances fails to relieve the pain of wounded men. Repeated injections, sometimes over a period of many hours, are not absorbed until finally, by shock therapy and warmth, the circulation is reestablished in the skin and subcutaneous regions. All of the subcutaneous deposits of morphine are then taken up by the active circulation so rapidly that signs of morphine poisoning previously not present then appear, as shock is overcome.

b. Although the intravenous use of morphine is desirable and would eliminate the problem, such use is not ordinarily practicable under outside field conditions. In this case, intramuscular injection followed by massage is the choice. All morphine injections should be made low enough on an extremity so that a tourniquet can be placed proximal to them if poisoning develops. More care is to be exercised in recording dosage used, time given, and site of injection.

6. Treatment of Morphine Poisoning.

Realization that morphine intoxication may have a rather abrupt onset many hours after the last morphine injection, under the circumstances discussed above, is a considerable help in recognizing the problem at hand. Correct diagnosis leads to prompt and effective treatment. A tourniquet, intermittently loosened, is placed proximal to the site of the injection. Primarily, the treatment of morphine poisoning consists in the effective prevention of anoxia. This is best accomplished by oxygen administration with artificial respiration (if necessary) easily carried out with the aid of a closed anesthesia apparatus by means of intermittent bag pressure, with carbon dioxide absorption. Atropin gr. 1/60 (1 mgm.) intravenously may be of value. Ephedrine gr. ½ (30 mgm.) intravenously has some value as a cerebral stimulant. It will help to support a falling blood pressure. Hypertonic glucose intravenously is a good diuretic and aids in excretion of morphine by the kidneys. Body heat should be conserved. If coma develops, a gastric tube should be inserted in order to eliminate the possibility of aspiration of gastric contents. Moreover, frequent change of position is of value in reducing the later appearance of pulmonary complications. The treatment is supportive while the morphine overdose is largely destroyed in the body.

For the SURGEON:

E. STANDISH,
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:

Surgeon, NAAF	- 400
Surgeon, NATSC	- 300
Surgeon, IBS	- 400
Surgeon, MBS	- 500
Surgeon, AES	- 150
Surgeon, IBS	- 100
Surgeon, PBS	- 500
Surgeon, AMMOT	- 25
Surgeon, CB MBS	- 50
Surgeon, Seventh Army	- 350
Surgeon, Fifth Army	- 600
Surgeon, Hq. Command, AF	- 50
Surgeon, NATOUSA	- 200

HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

29 December 1943

CIRCULAR LETTER NO. 49

SUBJECT: Anesthesia.

1. INHALATION ANESTHESIA.

When nitrous oxide is available, it is useful for minor procedures, supplement of other forms of anesthesia, simple superficial debridement, painful changes of dressings, and induction of ether. The injection of ether with other itself is particularly easy in the seriously wounded. Ether is the choice in the seriously wounded, particularly for major thoracic surgery (through the open pleura), abdominal surgery and in caring for comminuted fractures of the femur. It is the choice in shock or when shock is feared. Ether is so widely recognized as the most desirable agent for use in the seriously wounded, its corresponding merit is evident for patients who are in less precarious condition. It has been used too little in this theater.

2. LOCAL ANESTHESIA.

This is accomplished chiefly with procaine (novocaine or cocaine for topical anesthesia) for neuromuscular, some maxillo-facial and for minor surgical procedures. When many casualties are awaiting treatment, regional block procedures are, chiefly because of the time required, of little value in the forward Combat Zone; exceptions here are paravertebral or intercostal blocks for controlling thoracic pain and sympathetic blocks when the circulation of an extremity is impaired.

3. SPINAL ANESTHESIA.

This is almost never acceptable for forward surgery in battle casualties. (Include, here, of course, is the surgery of fresh trauma however it occurs.)

4. METHODS SUGGESTED.

a. The suggestions outlined below are based upon experience gained in previous campaigns, in addition to that found in the Italian campaign.

b. Examination of a 7500 case sample of anesthesia showed, in this sample at least, that the death rate attributable to pentothal was six times higher than that from all other agents combined. It seems reasonable to consider this an indication that pentothal had been used probably rather than as a sign of inadequacy of the agent itself for military use.

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c. The simplicity with which pentothal anesthesia can be made available, particularly with compactness and the simplicity of the necessary equipment, the ease with which a smooth induction can be produced even by the inexperienced, the usual prompt awakening of the patient, the number of cases an inexperienced man can "get away with," even though his actual death rate may be unreasonably high in comparison with what it should be -- all of these factors have tended to outweigh the fact that pentothal is a powerful tool, that overdosage is not always easy to overcome, that pentothal's use is incompatable with certain types of injury, and that its fatal dose varies extremely widely from one patient to another.

d. While the action of pentothal cannot be discussed in detail here, anyone employing it should, for safety, be aware that among other effects pentothal (as do all barbiturates) destroys the sensitivity of the respiratory center to its normal chief stimulus, carbon dioxide. Under full pentothal anesthesia the body has to make use of a supplementary mechanism in order to keep respiration going. To maintain respiration, a shift is made from the normal driving action of carbon dioxide on the respiratory center to the action of anoxia on the carotid mechanisms in the neck. Anoxia will stimulate respiration just as powerfully under deep pentothal anesthesia as it will under light anesthesia. Thus the uninformed anesthetist who believes that respiratory stimulation under pentothal means that the patient is waking up, whereas it may simply mean that the patient is not getting enough oxygen. A wrong interpretation here, leading to the further administration of pentothal, has caused deaths. In other words, the true depth of pentothal anesthesia may be impossible to determine when there is a low oxygen content in the blood. For safety, certainly always in long operations, oxygen is administered with pentothal.

e. As explained above, under full pentothal anesthesia the respiratory center loses its sensitivity to carbon dioxide. In fact, carbon dioxide becomes a depressant to respiration under this agent and accordingly, its use as a respiratory "stimulant" is contraindicated during treatment of respiratory depression by pentothal.

f. Acceptable practice in the use of pentothal requires the use of 2½% solution, routine administration of oxygen, and frequent observation of pulse and blood pressure during anesthesia.

7. PREANESTHETIC MEDICATION. Morphine may or may not be used. It is probable that preliminary morphine lessens the quantity of pentothal needed. Whether or not too high a price may be paid for this convenience is not certain at this time. Of considerably more importance is the use of atropin. Its purpose is to minimize vagal reflexes. Atropin gr. 1/100, subcutaneously, should be given about one hour preceding anesthesia, with half the dose (gr. 1/200), intravenously, just before anesthesia is started, for major cases. During times of heavy admission of patients, there will not be time for the above and atropin gr. 1/100, intramuscularly, 10 or 15 minutes preceding anesthesia is satisfactory. (In the presence of severe tachycardia atropin is avoided.) When laryngeal spasm occurs during pentothal anesthesia, neostigmine atropin gr. 1/100, intravenously, as soon as possible, even though the acute case had been administered preanesthetic medicine shortly before.

h. CLINICAL CHOICE.

(1) Pentothal is of proved great value in meeting emergencies, of that we can be certain. Equally certain is it is that the choice of

pentothal is unwise, in the long run, in the presence of certain injuries:

(a) When the patient is suffering from morphine overdosage.

(b) When shock is present, or when shock is anticipated. The following wounds are liable to be associated with shock. Penetrating wounds of the chest or of the abdomen, compound fractures of the femur, severe hemorrhage, even when from otherwise trivial wounds. Pentothal should rarely if ever be used in the above conditions; other is much safer.

(c) Pentothal is a dangerous agent to use when incision of a cervical abscess is to be undertaken. Many deaths have occurred under such circumstances. Apparently, inflammation in the region of the carotid bodies and sinuses causes a sensitization of reflexes arising there. These probably account for the notorious incidence of sudden death during such operations. Since pentothal (and other barbiturates) is not very effective in depressing these reflexes its choice should be avoided in most cases of this kind. Rarely, as in some cases where compound fractures of the face may also be present, pentothal may be the reasonable choice for handling cervical abscesses. In such cases the following precautions should be observed:

1. Use heavy atropinization in the preanesthetic medication.

2. No surgery is to begin in cases with irritable carotid sinus until at least 10 minutes following induction of pentothal anesthesia.

3. Avoid pressure on the carotids. If possible, block them with local anesthesia.

(2) In another group, the use of pentothal may at times be debatable, but is usually unwise, as follows:

(a) In general, pentothal should be avoided when the operative position or procedure may interfere with the airway, or make artificial respiration difficult, as in operations that must be carried out in the face-down position, in operations on maxillo-facial injuries or other injuries involving the airway. If local is undesirable (as will usually be the case here) use ether, preferably with intratracheal intubation.

(b) While skillful (or lucky) men may often get away with the use of pentothal as the chief anesthetic agent for intracranial surgery, its employment here is usually not wise for the following reasons:

1. Such operations are long. Pentothal is best limited to short (half-hour) procedures.

2. Such operations are usually associated with great blood loss, often a liter or more, by actual measurement. Extensive blood loss contraindicates pentothal.

3. Pentothal often unexpectedly causes respiratory depression and anoxia. Anoxia produces immediate swelling of the brain and may make an intracranial procedure difficult or impossible. Local or other is the best available choice in these cases.

(c) Experience appears to show that patients with severe burns tolerate pentothal anesthesia poorly.

(3) The great field where pentothal has proved its value in military medicine, is in providing anesthesia, when relaxation is not needed, for short (half-hour) procedures in men in good condition.

For the SURGEON:

E. Strudell

L. STRUDELL,
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:

Surgeon, NAAF	- 400
Surgeon, NAASC	- 300
Surgeon, FBS	- 700
Surgeon, IBS	- 300
Surgeon, AFS	- 150
Surgeon, IBS	- 100
Surgeon, FBS	- 200
Surgeon, ALFSOT	- 25
Surgeon, CD IBS	- 50
Surgeon, Seventh Army	- 350
Surgeon, Fifth Army	- 600
Surgeon, Hq. Command, AF	- 50
Surgeon, NATOUSA	- 200

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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

16 November 1943

CIRCULAR LETTER NO. 48

I - PARAGRAPH IV, CIRCULAR LETTER NO. 19 IS AMENDED AS FOLLOWS:

Operations of the Knee Joint

Follow-up studies on over 200 operations performed in this theater for removal of dislocated or ruptured semilunar cartilages and other derangements of the knee joint have been compiled. Appraisal of these results lead to the following recommendations:

1. Operations for the repair or reconstruction of the collateral or cruciate ligaments of the knee, or for recurrent dislocation of the patella, are not to be performed in this theater.

2. Careful study and mature surgical judgment will be exercised in the selection of cases for excision of a semilunary cartilage or joint mouse.

a. Elective arthrotomy of the knee will be performed only on the Orthopedic Service of a General Hospital.

b. Initial injuries of the semilunar cartilage without locking and those that unlock by gentle manipulation, or after 5 to 6 days of skin traction, will not be subjected to operation. Pressure support, rest, graduated to protected, then full weight bearing and carefully supervised quadriceps exercise for 2 to 10 weeks, are suggested as a method of management. Following symptomatic relief these soldiers may be returned to duty.

c. Arthrotomy will be limited to:

(1) The persistent locked knee.

(2) The unlocked knee in a soldier who cannot perform non-combat duty because of his disability. This will be only the exceptional case.

d. Contraindications to be considered are age, arthritic changes, unstability of the joint and, in particular, any but the most favorable mental attitude of the soldier.

e. Recurrent cases, not locked, and those recurrent cases that unlock with non-operative therapy, are to be returned to duty unless the total period of disability in any calendar year exceeds 90 days. Under such circumstances, they will be transferred to the Zone of the Interior.

f. Operation for the removal of both cartilages from one knee or for one cartilage from each knee is to be performed only on written recommendation of a Disposition Board of a General Hospital.

3. A General Hospital in which arthrotomy of the knee is performed will be expected to hold the patient for a minimal period of six weeks, so that the operating surgeon may supervise the regimen of post-operative exercises and motion essential to a good result. Proper post-operative supervision is as essential to recovery as the operation. If prevailing evacuation policies indicate that the patient cannot be held for at least 6 weeks post-operatively, he should be transferred farther to the rear for operation.

4. After 6 weeks in a General Hospital, the patient may be transferred to a Convalescent Hospital for further care with full instructions relative to continuation of corrective exercises.

II - PARAGRAPH III, CIRCULAR LETTER NO. 19 Is AMENDED AS FOLLOWS:

Operations for Recurrent Dislocation of the Shoulder Joint or Chronic Dislocation of the Acromio-clavicular Joint

1. The history of a patient relative to previous dislocation of the shoulder is notoriously unreliable. Before making a diagnosis of recurrent dislocation, one or more episodes should be confirmed on Army Medical Records, preferably with supporting X-Ray evidence.

2. Operations of this type will be performed only with written approval of the Disposition Board of a General Hospital following demonstration that the disability is of a nature that the soldier cannot perform non-combat duty and when his age and mental attitude give a reasonable prospect of military rehabilitation.

III - USE OF EXTERNAL SKELETAL FIXATION APPARATUS (ROGER ANDERSON) IN TREATMENT OF FRACTURES OF THE EXTREMITIES.

1. This is a highly specialized method for the treatment of carefully selected cases, chosen on the basis of special indications.

2. The use of external skeletal fixation is to be limited to surgeons with training and experience in the method. If a special indication for use of the method is found in a hospital without such a surgeon, the patient will be transferred to a hospital with this trained personnel.

3. A patient with the apparatus in place is not to be transferred from one hospital to another within the theater except under emergency conditions. When a transfer is essential, he is to be routed to a hospital where there is a surgeon experienced in the method. Patients are not to be evacuated to the Zone of the Interior with the apparatus in place, but will be held for a sufficient time to permit the removal of pins and the substitution, if indicated, of conventional means of splinting.

4. Clinical records of each patient, on whom the method is utilized, will be forwarded through channels to the Surgeon, M.T.O.U.S., after the treatment is completed. This record will contain essential data for identification of the case, date of injury, fracture diagnosis, original treatment, character of the wound if compound, problem involved and indication for use of the method, length of time required to apply the apparatus and reduce the fracture, number of X-Ray films required, date and extent of any observed distraction, incidence of pin infection and other complications, date of removal of the apparatus and subsequent treatment, result and disposition.

IV - DELAYED OPEN REDUCTION AND INTERNAL FIXATION OF COMPOUND FRACTURES WITH OR WITHOUT SECONDARY SUTURE OF WOUND.

1. This procedure is still under trial with reference to indications, hazards, and incidence of serious complications. Its use is restricted to special groups authorized to assume the responsibility as a special study.

V - FRACTURES OF CARPUS.

1. Greater care is to be exerted in making a precise and early diagnosis of carpal fractures and dislocations. Early reduction is essential if a satisfactory result is to be obtained.

2. Operative treatment for old unrecognized fractures of the scaphoid will fail to rehabilitate a soldier in this theater. If complete disability is present, he should be transferred to the Zone of the Interior.

VI - HERNIATED NUCLEUS PULPOSUS.

1. Recommendation Par. II, Circular Letter No. 19, 26 June 1943, is interpreted to apply to all patients, Army, Navy or Allied Force under treatment for this condition in U.S. hospitals.

VII - "PARRY" OR MONTEGGIA FRACTURE.

1. Attention is directed to fracture of the shaft of the ulna with dislocation of the head of the radius. Uncommon in civilian practice, this fracture due to direct violence to the forearm (blow with rifle butt or other blunt weapon), is not infrequent in military operations. It is essential that the dislocation of the radius be recognized and proper treatment instituted at the time of initial treatment.

VIII - THE TOBRUK SPLINT AND HIP SPICAS

1. Experience has shown that the use of Tobruk splint is best limited to fractures of the lower one-third of the femur, supra-condylar fractures, and wounds involving the knee joint. Even in these injuries it has no advantages over a well applied hip spica.

2. The most comfortable and efficient hip spica for immobilisation of a fracture of the femur for transportation, following initial surgical treatment, is a short waisted, double spica extending only to the knee on the well leg and maintaining 20 to 30 degrees of abduction with the knee slightly flexed. The plaster on the injured leg is carried beyond the toes by a plaster slab, leaving the toes fully exposed anteriorly. Care is taken to avoid equinus and to hold the foot in a neutral position between valgus and varus.

3. High waisted plasters that extend to or above the costal margin cause discomfort. It is better to tie in the well leg and stop the plaster just above the iliac crest.

4. The chief responsibility of the surgeons of the forward area in the management of all compound fractures is the prevention of infection, rather than the anatomic correction of deformity. Early evacuation to the Base (a fractured femur should reach a General Hospital within 10 days) will allow for definitive reduction of the deformity.

IX - TRANSPORTATION OF CASUALTIES WITH PARALYSIS.

1. Meticulous nursing care is essential for the prevention of bed sores. This care is interrupted by rapid evacuation through a chain of hospitals. While it is important to transfer these cases to the Base, when they are transportable, they should not be subjected to long ambulance lifts. On arrival at an intermediate station, careful nursing care should be provided immediately. If there are signs of pressure sores, the patient should be held for corrective measures before further transfer. These patients do not complain of pain and quite different criteria are required in an estimation of whether they are to be classified as "transportable" than are found applicable in the management of other casualties.

For the SURGEON:

E. STANDEN,
Colonel, M.C.
Deputy Surgeon.

DISTRIBUTION:

Surgeon, NAAF	- 400
Surgeon, NATOUSA	- 300
Surgeon, PBS	- 400
Surgeon, NBS	- 200
Surgeon, ABS	- 150
Surgeon, IBS	- 100
Surgeon, PBS	- 500
Surgeon, AMGOT	- 25
Surgeon, CD MBS	- 50
Surgeon, Seventh Army	- 350
Surgeon, Fifth Army	- 600
Surgeon, Hq. Command, AF	- 50
Surgeon, NATOUSA	- 200

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H E A D Q U A R T E R S
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

30 November 1943

CIRCULAR LETTER NO. 46

I - DENTAL REPORT AS PART OF MONTHLY SANITARY REPORT.

1. The dental report as part of monthly sanitary report as required by Section IV, Circular No. 165, Headquarters, NATOUSA, dated 30 August 1943, is not being made by many organizations. Many organizations who are making the report are not complying with the provisions of the above mentioned circular.

2. It is specifically required that the number of cases of Vincent's stomatitis and the number of men having insufficient teeth to masticate the army ration be stated. If there are no cases, a negative report is required. A statement that teeth and gums are satisfactory is not sufficient. Classifications are not desired when stating the number of men having insufficient teeth. An example of correct report is as follows:

Number of cases of Vincent's stomatitis - 2
Number of men having insufficient teeth to masticate the army ration - 6.

3. Any other important observations not covered by other dental reports may be added.

II - REPORT OF DENTAL SERVICE, M.D. FORM 57.

1. Numerous modifications of M.D. Form 57 are being used in this theater for Report of Dental Service. Only the authorized Form 57, Medical Department, U.S.A. (revised May 14, 1942) will be used in the future.

2. If these forms are not available in sufficient numbers, mimeograph reproductions are authorized.

3. Paragraph 5 A of this report will continue to be completed in full in this theater, showing, name, rank, component and duties of officer personnel.

III- INFORMATION WITH RESPECT TO DIAGNOSIS, ETC., MEMBERS OF THE ALLIED ARMIES.

1. Information concerning the diagnosis, treatment, line of duty, and allied matters will not be furnished to members of the Allied Armies treated in U. S. Army hospitals. This information is considered confidential and privileged, and only certain bona fide inquiries should be answered.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

30 November 1943

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Number of cases of Vincent's stomatitis - 2
Number of men having insufficient teeth to masticate the army ration - 8.

3. Any other important observations not covered by other dental reports may be added.

II - REPORT OF DENTAL SERVICE, M.D. FORM 57.

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For the SURGEON:

E. [illegible],
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:

Surgeon, NAAF	- 700
Surgeon, DBS	- 400
Surgeon, MBS	- 300
Surgeon, ABS	- 150
Surgeon, IBS	- 100
Surgeon, PBS	- 500
Surgeon, AMGOT	- 25
Surgeon, CD MBS	- 50
Surgeon, Seventh Army	- 350
Surgeon, Fifth Army	- 600
Surgeon, Hq. Command, AF	- 50
Surgeon, NATOUSA	- 200

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

2 October 1943

CIRCULAR LETTER NO. 38

SUBJECT: MEDICAL LABORATORY SERVICE.

1. A diagnostic, epidemiological, and investigative medical laboratory service is provided for all installations in the theater. It is desired to acquaint all Medical Department organizations with the facilities available and to define the functions of each type of laboratory, and their interrelationship, for the information of all concerned.

2. Diagnostic laboratory facilities, designed to meet the needs of each organization, are provided for all hospitals, clearing companies, and dispensaries.

a. Evacuation hospitals, Field Hospitals, Clearing companies, and dispensaries without other laboratory service are provided with chests, laboratory, field. This equipment, plus the additions that are now being made, gives facilities for routine clinical microscopy, including blood typing, dark field examinations, and smear diagnosis of malaria. In addition, steps are being taken to supply Evacuation and Field Hospitals with a chest, serological, for use in running routine Kahn tests and tests on prospective blood donors, to prevent the transmission of syphilis through blood transfusions. Donors, or others in which positive Kahn tests are found by Field and Evacuation hospitals, must have the diagnosis confirmed by larger army medical diagnostic laboratories before treatment is given for syphilis. To meet emergencies, when the diagnostic laboratory facilities in hospitals are unable to cope with important laboratory work required, assistance should be requested, on a temporary basis, from the nearest laboratory army until the emergency is passed.

b. General hospitals and station hospitals are equipped to do clinical microscopy, serology, and limited bacteriology and blood chemistry. General hospitals have facilities for gross and microscopic pathology, and evacuation and station hospitals, gross pathology. The required microscopic study of tissue, obtained by medical installations without facilities for this type of work, should be forwarded for completion to the closest General Hospital, Laboratory Army or, when established, the 15th Medical Laboratory General. General Hospitals and Laboratories Army are equipped to do limited toxicology. The 15th Medical Laboratory General, when established, will be equipped to do complete toxicology.

3. Epidemiological Laboratories: Each hospital laboratory should, insofar as it is possible, do necessary epidemiological investigations, including bacteriology of water for its own command, including patients. When the facilities and personnel are inadequate and the importance of disease outbreaks is considered to warrant further investigation, they should request assistance from the nearest Laboratory Army, thru command channels. Disease

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outbreaks in other troop units should be investigated by Laboratories Army or the 15th Medical Laboratory General. Routine bacteriological investigations of water and food, for the areas which they serve, also will be done by these laboratories.

4. The investigation of special health problems of importance to troops in this theater will be a part of the function of the Laboratories Army and Laboratory General.

5. Pathology and Museum Service: It is desired, whenever possible, that careful autopsy, in accordance with instructions in the manual "The Army Autopsy and Histopathologic Service", and proper examination of pathological specimens be done, in keeping with the needs for medical records and practice in this theater. Officers, who have the opportunity to obtain valuable pathological material and museum specimens, should take steps to see that they are properly fixed and forwarded to the Army Medical Museum, Washington, D. C., in accordance with the provisions of AR-210. As soon as the 15th Medical Laboratory General is established, it will become the pathological center for histo-pathology and consultation work in this theater. The Laboratory General will, in addition, serve as a collecting point for the sorting and forwarding of museum material to the Army Medical Museum, Washington, D. C.

6. Operation of Laboratories and Training of Laboratory Personnel: The facilities and personnel of Laboratories Army and the 15th Medical Laboratory, in addition to other duties, will conduct surveys in regard to the efficiency of laboratory operations in hospitals and dispensaries, paying particular attention to the training and efficiency of personnel, the quality of work done, and the adequacy of equipment and supplies. They will render reports of their findings, through command channels, to the Surgeon NATOUSA. Where personnel is found with inadequate training to perform the services required, Laboratories Army or the 15th Medical Laboratory General will provide for local instruction of personnel involved or set up schools within their own organization for the training of such personnel. The division of responsibility for training and inspection will be worked out by conference between the Laboratories Army concerned and the 15th Medical General Laboratory.

7. General Consultation Service for Laboratories: General Hospital Laboratories, Laboratories Army, and the 15th Medical Laboratory General will render a consultation service, as required, to other Medical Department and U.S. Army Forces installations. The 15th Medical Laboratory General, in all probability, will not be in operation for the next three months. Its technical personnel will be available for technical consultation, investigation of problems using other laboratory facilities, and for teaching purposes. The personnel of this laboratory can be contacted at APO #782, U. S. Army, present telephone number, Caserta 39, thru Naval.

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For the SURGEON:

[signature]
A. Stanton,
Colonel, M. C.,
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

2 October 1943

CIRCULAR LETTER NO. 37

SUBJECT: Diagnosis and Treatment of Diphtheria.

1. Deaths from diphtheria are tragic because they are generally avoidable. The necessity for the early diagnosis and treatment of this disease cannot be stressed too strongly. From evidence at hand it appears that an improvement can be made in the recognition and treatment of diphtheria in this theater because too frequently patients do not arrive at medical installations in which definitive therapy can be given until after the second or third day of their disease.

2. All medical personnel should be on the alert and think of diphtheria whenever the complaint of "sore throat" is made or when there is objective evidence of infection of the rhinopharynx. The common causes of sore throat are the common cold, streptococcal infection of the rhinopharynx, Vincents infection, herpetic pharyngitis and diphtheria. All patients suffering from sore throat should be repeatedly examined in order that the early appearance of a membrane be noted and steps be immediately taken to establish the etiological diagnosis.

3. Instances of nasal and wound diphtheria are bound to occur in an active theater of operations when there is an increased incidence of this disease. Medical officers must be on the alert and recognize such infections in their early stage because the rich blood supply of the nasal region and of granulating wounds facilitates the rapid absorption of diphtheria toxin, thus giving rise to severe instances of the disease.

4. Early treatment with adequate doses of diphtheria antitoxin is of paramount importance in the therapy of diphtheria. Whether facilities for preparing and staining films from membranes or for taking cultures are, or are not available, if the mortal process resembles diphtheria clinically, do not wait for laboratory confirmation but rather give diphtheria antitoxin in adequate doses. One should not hesitate to give large doses of antitoxin and in general it should all be given in one dose. The following dosage schedule is recommended:

a. Mild diphtheria. 50,000 units of antitoxin given by the intramuscular route in one dose.

b. Moderately severe diphtheria. 100,000 to 150,000 units intramuscularly in one dose (half in each buttock).

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c. Severe diphtheria. 100,000 units administered by the intravenous route followed immediately by 100,000 units intramuscularly. Subsequent doses of 50,000 units should be given at ½ hourly intervals intramuscularly for two doses. More antitoxin may be given if the patient's condition indicates the need for it.

d. Always perform tests (skin or intraocular) to determine the patient's sensitivity to antitoxin before it's administration. Adrenalin should always be kept at the bedside during, and for at least one hour after the administration of antitoxin.

5. It has been noted that under the conditions which prevail in armies, patients die of cardiac failure during the period of convalescence from diphtheria. For this reason patients ill with diphtheria should be carefully handled. To begin with they should be evacuated promptly to a hospital in which definitive treatment and after care can be properly provided. Additional transfer should be avoided and these cases should always be handled as litter patients. While such patients are in the hospital the pulse rate and blood pressure should be watched throughout their illness since they are important guides to prognosis.

a. All cases of diphtheria should be kept flat in bed without latrine privileges and should not be allowed up for any purpose. The period of bed rest should be at least two weeks in mild or moderately ill patients, and four or more weeks for seriously ill patients or for those who show any signs of paralysis or cardiac damage. These patients should be reconditioned very slowly during their convalescence and every care should be taken to see that they avoid exertion. It must be realized that the management of diphtheria in an active theater of operations is somewhat different from that in civilian life.

F. A. HESS,
Brig. General, USA,
Surgeon

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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

15 September 1943

CIRCULAR LETTER NO. 36

SUBJECT: Army Nurse Corps: married nurses.

1. Army regulations provide that commutation of quarters will not be authorized for married nurses so long as public quarters are available. However, this should not be interpreted to mean that a married nurse may not live with her husband off the post.

2. Where married members of the Army Nurse Corps are granted authority to reside off the post, they will be expected to maintain the same working schedule with respect to day and night duty as nurses occupying nurses' quarters.

3. Official publication of the marriage of a member of the Army Nurse Corps should be made on the post, and the nurse concerned should be issued a pass showing both her maiden and married name.

4. Reports of such marriages will be forwarded to the Office of The Adjutant General.

5. If a change of name on official records is desired, the information requested in AR 40-20, par. 3j (6), dated 5 April 1943, will also be submitted.

6. A record of the marriage of a nurse while a member of the Army Nurse Corps will be entered on her letter of appointment (W.D., S.G.O. Form 175).

For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

14 September 1943

CIRCULAR LETTER NO. 35

Pertinent sections of AR 600-37, 29 July 1943, is reproduced in part herewith for the information of all concerned:

ARMY REGULATIONS)
No. 600-37)

WAR DEPARTMENT,
Washington 25, D. C., 29 July 1943

PERSONNEL

PRESCRIBED SERVICE UNIFORM--ARMY NURSE CORPS, PHYSICAL THERAPY AIDES, AND HOSPITAL DIETITIANS

Section I. Wearing of uniform, general provisions
II. Prescribed uniform and wearing thereof
III. Insignia and wearing thereof.

SECTION I

WEARING OF UNIFORM, GENERAL PROVISIONS

1. Occasions.--a. The prescribed or authorized uniform will be worn by all Army nurses, physical therapy aides, and hospital dietitians at all times, whether on or off duty, when attending ceremonies and social functions of an official nature, and when in foreign countries. Exception is authorized when engaged in games or sports, for which clothing appropriate to the game or sport may be worn.

b. Mourning.--The badge of military mourning will consist of a straight band of black crepe or plain black cloth 4 inches wide, worn around the left sleeve of the jacket or overcoat above the elbow. It will be worn only

when prescribed for funerals by the commanding officer, or when specifically ordered by the War Department. The same type of band may also be worn as family mourning.

c. Whenever changes in design or material of uniform are made, all personnel affected are authorized to wear out existing clothing. Uniforms procured or manufactured after promulgation of the changes will be of the new type.

2. Prescribed and authorized uniform.--a. The service uniform, winter or summer, is the prescribed uniform for wear on all occasions, other than for hospital duty, or where cold climate clothing is authorized, or for occasions for which the one-piece dress is authorized, or for exercise.

b. The beige summer service uniform is authorized for wear in lieu of the olive-drab summer service uniform for all occasions.

c. The one-piece dress is authorized for wear when off duty for unofficial social functions in lieu of the service uniform.

d. The dates on which nurses will go into summer or winter uniforms will conform to the dates established for officer personnel by the commanding officer of the post, camp, or station at which they are stationed or the nearest adjacent post, camp, or station. The wearing of the winter uniforms when troops are in summer uniform, and vice versa, is authorized.

3. Care of uniforms.--a. All Army nurses, physical therapy aides, and hospital dietitians will maintain their uniforms in a thoroughly neat and serviceable condition. They will, by their appearance, set an example of neatness and strict conformity to regulations in uniform and equipment.

b. Chief nurses and others in charge of units or detachments will impress upon all in the military service that the dignity of the uniform and the respect due it are best preserved when its wearers so conduct themselves as never to cast discredit upon it.

c. Chief nurses and others in charge of units or detachments will see that all Army nurses, physical therapy aides, or hospital dietitians under their jurisdiction have uniforms as prescribed in accordance with these regulations, and will inspect and verify the service and hospital uniforms and equipment of personnel under their jurisdiction as often as they may deem necessary.

d. Chief nurses and others in charge of units or detachments will be held responsible for the appearance of their subordinates at all times, will encourage them to keep their uniforms clean and neat, and will do everything possible to facilitate the proper care, cleaning, and preservation of their uniforms.

4. Persons not in Army Nurse Corps, or who have not been appointed in Medical Department as physical therapy aides or hospital dietitians.--a. It shall be unlawful for any person not an officer * * * of the United States Army

* * * to wear the duly prescribed uniform of the United States Army * * * or any distinctive part of such uniform, or a uniform any part of which is similar to a distinctive part of the duly prescribed uniform of the United States Army * * *; Provided: That the foregoing provision shall not be construed so as to prevent * * * members of * * * such * * * organizations as the Secretary of War * * * may designate, from wearing their prescribed uniforms; * * * nor to prevent any person who has been honorably discharged from the United States Army * * * from wearing his uniform from the place of his discharge;* * * nor to prevent any person from wearing the uniform of the United States Army * * * in any playhouse or theater or in moving-picture films while actually engaged in representing therein a military * * * character not tending to bring discredit or reproach upon the service. * * *

Any person who offends against the provisions of this section shall, on conviction, be punished by a fine not exceeding $300, or by imprisonment not exceeding six months, or by both such fine and imprisonment: * * * Section 125, National Defense Act, as amended by act 4 June 1920 (41 Stat. 836), and act 30 June 1921 (10 U.S.C. 1393; M.I. 1939, secs. 2148-2151, 2153-2157).

b. The above provisions apply equally to the uniforms in these regulations for the Army Nurse Corps, and for physical therapy aides and for hospital dietitians appointed in the Medical Department.

SECTION II

PRESCRIBED UNIFORM AND WEARING THEREOF

5. b. Winter service uniform for oversea theaters, departments, and base commands.--The winter service uniform for Army nurses, physical therapy aides, and hospital dietitians in oversea theaters, departments, and base commands consists of the following items:

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(1) Cap, service, wool, olive-drab, nurses'.
(2) Jacket, wool, olive-drab, women's, nurses', except when waist without coat is authorized. (par. 15)
(3) Skirt, wool, olive-drab, dark, women's, officers', except when slacks are authorized.
(4) Waist, cotton, women's (khaki), or waist, wool, women's (khaki).
(5) Necktie, women's (khaki).
(6) Shoes, service, women's, low (Army russet).
(7) Hosiery, neutral shade.
(8) Gloves, leather, dress, women's (Army russet), or gloves, wool, olive-drab, women's.
(9) Tags, identification.

Optional

(10) Decorations, service medals, and badges,
(11) Ribbons, service.
(12) Overcoats, field, women's, officers'.
(13) Raincoat, parka type, women's, officers'.
(14) Scarf, women's (khaki).
(15) Overshoes, low, women's or overshoes, arctic, women's 4-buckle.
(16) Bag, utility, nurses' (Army russet).
(17) Slacks, women's winter, dark olive-drab. (par.20)

6. Summer service uniform.--a. Olive-drab summer service uniform.--The olive-drab summer service uniform for Army nurses, physical therapy aides, and hospital dietitians consists of the following items:

(1) Cap, service, summer, olive-drab.
(2) Jacket, service, summer, olive-drab, except when waist without coat is authorized. (par. 15)
(3) Skirt, service, summer, olive-drab, except when slacks are authorized.
(4) Waist, cotton, women's (khaki).
(5) Necktie, women's (khaki).
(6) Shoes, service, women's low (Army russet).
(7) Hosiery, neutral shade.
(8) Tags, identification.

Optional

(9) Decorations, service medals, and badges.
(10) Ribbons, service.
(11) Gloves, leather, dress, women's (Army russet).
(12) Overshoes, low, women's.
(13) Bag, utility, nurses' (Army russet).
(14) Slacks, women's, summer, dark olive-drab. (par.20)
(15) Raincoat, parka type, women's, officers'.

b. Beige summer service uniform.--The beige summer service uniform for Army nurses, physical therapy aides, and hospital dietitians consists of the following items;

(1) Cap, service, summer, beige.
(2) Jacket, service, summer, beige, except when waist without coat is authorized. (par. 15)
(3) Skirt, service, summer, beige.
(4) Waist, cotton, white.
(5) Necktie, maroon.
(6) Shoes, low, service, women's (Army russet), or shoes, white, nurses'.
(7) Hosiery, neutral shade.
(8) Tags, identification.

Optional

(9) Decorations, service medals, and badges.
(10) Ribbons, service, women's.
(11) Gloves, leather, dress, (Army russet), or gloves, beige, cotton.
(12) Bag, utility, nurses' (Army russet).
(13) Raincoat, parka type, women's, officers'.

c. Seersucker summer service uniform.--In oversea areas the brown and white striped seersucker hospital uniform with the seersucker jacket will comprise the normal summer service uniform. This uniform will consist of the following items:

(1) Cap, service, summer, olive-drab, or cap, service, summer, beige, or cap, service, winter, olive-drab.
(2) Uniform, cotton, seersucker, nurses'.
(3) Jacket, cotton, seersucker, nurses'.
(4) Shoes, service, women's, low (Army russet).
(5) Hosiery, neutral shade.
(6) Tags, identification.

Optional

(7) Decorations, service medals, and badges.
(8) Ribbons, service.
(9) Gloves, leather, dress, women's (Army russet).
(10) Cape, olive-drab, nurses'.
(11) Raincoat, parka type, women's, officers'.
(12) Bag, utility, nurses' (Army russet).

* * * *

8. b. Field hospital uniform for oversea areas.--The field hospital uniform for oversea areas, which will be the normal uniform for wear in all hospitals in oversea theaters, departments, and base commands, except where specific exemption is provided by the War Department, will be the brown and white striped seersucker uniform and will consist of the following items:

(1) Cap, seersucker, nurses.
(2) Uniform, cotton, seersucker, nurses'.

(3) Shoes, service, women's, low (Army russet), or shoes, field, women's (Army russet).
(4) Hosiery, neutral shade.
(5) Tags, identification.

Optional

(6) Cape, olive-drab, nurses'.
(7) Sweater, coat style, nurses', heather.

9. Field hospital uniform for advanced zone.--The field hospital uniform for nurses assigned to duty in advanced zones or otherwise engaged in rough field duty will consist of the following items:

a. Helmet, steel, M1 or liner, helmet, M1.
b. Shirt, herringbone twill, women's, special.
c. Trousers, herringbone twill, women's, special.
d. Shoes, field, women's.
e. Anklets, wool, women's.
f. Tags, identification.

Optional

g. Raincoat, parka type, women's, officers'.
h. Overcoat, field, women's, officers'.
i. Overshoes, low, women's or overshoes, arctic, women's, 4-buckle.

* * * *

11. Headgear.--a. General.

(1) The cap, service, will at all times be worn centered squarely on the head in order to give proper fit and appearance.
(2) The helmet, steel, and liner are authorized for wear by all Army nurses, physical therapy aides, and hospital dietitians.

b. Cap service.--Of adopted design, made with a stitched semirigid visor covered with same material, 1 7/8 inches in width at the center, with a front strap 3/4 inch in width of same material and extending to back side seams. One center grommet 1 3/8 inches below the top of crown to accommodate cap insignia. To be reinforced in the front with suitable material to support the weight of the insignia.

12. Coats and jackets.--a. General.

(1) All coats and jackets will be buttoned throughout whenever worn.
(2) Except for ceremonial and special occasions, the wearing of the service uniform without the jacket, and the removal of the jacket when on duty indoors, are authorized.

* * * *

13. Skirt.--Of adopted design, six-gore skirt, with a 1 1/4-inch waistband, and side opening with suitable closure.

14. Stockings.--Stockings will be worn by all Army nurses, physical therapy aides, and hospital dietitians when in uniform.

15. Waist and necktie.--The waist may be worn open at the neck without a necktie when the jacket is not worn, as may be prescribed by the chief nurse, or others in charge of units or detachments, provided the waist is of the convertible collar type. When the waist is worn without the jacket, but with the necktie, the necktie will be tucked into the waist between the second and third buttons. The necktie will always be worn when the jacket is worn.

16. Overcoats.--a. General.--The overcoat is authorized for wear for ceremonial and special occasions, and may be prescribed by the chief nurse, or others in charge of units or detachments when weather conditions warrant.

b. Overcoat, field.

(1) Design.--A utility coat, two ply throughout, with a buttoned-in removable wool lining and detachable hood; double-breasted with convertible style roll collar and notch lapel, buttoned down the front with a double row of large regulation overcoat buttons, five on each side, with the top buttons approximately 6 3/4 inches apart, and lower buttons approximately 5 inches apart. A rectangular throat piece is provided with two buttonholes for 24-ligne buttons. A detachable belt same material as coat with 2 1/4-inch tongueless bar buckle and belt keeper held in place by two side loops, and a strap keeper and belt strap. Adjustable tabs to button at cuffs, with 30-ligne buttons.

(2) Pockets.--Two diagonal lapping pockets and hand opening in lining and finished with pointed flaps buttoning to the rear.

(3) Shoulder loops.--On each shoulder a loop about 6 inches in length, 2 1/8 inches in width at the lower end and 1 3/4 inches in width at the upper end, which is slightly pointed, same material as the coat, let in at the sleeve seam, buttoning at the upper end with a 30-ligne button.

(4) Hood.--Detachable, two ply, of same material as overcoat, with five buttonholes for securing to overcoat. Closed at the face by a drawstring inserted in a tunnel.

(5) Liner.--Made from an olive-drab wool fabric with inside yoke, extending down 3 1/4 inches below the armhole, faced with olive-drab rayon fabric, 12 buttonholes for buttoning into overcoat body.

* * * *

18. Utility bag.--a. General.--All Army nurses, physical therapy aides, and hospital dietitians when appearing in uniform and carrying the utility

bag with shoulder strap will wear the bag on the left side suspended from the left shoulder only. The carrying of a plain black bag with the blue uniform is authorized.

* * *

20. Slacks.--a. General.--Army nurses, physical therapy aides, and hospital dietitians are authorized to wear blue wool slacks with the blue winter uniform, and olive-drab slacks with both the olive-drab summer and winter uniforms under such conditions as the immediate commanding officer of the individuals concerned may deem appropriate.

* * *

21. Sweater.--Regulation sweaters may be worn on duty as authorized by the chief nurse or others in charge of units or detachments.

22. Overshoes.--Overshoes may be worn when weather conditions warrant.

23. Waterproof cap covers.--The wearing of a waterproof cap cover of commercial design over the cap, service in inclement weather is authorized.

24. Tags, identification.--Identification tags will be worn by all Army nurses, physical therapy aides, and hospital dietitians at all times. One tag to be suspended from the neck underneath the clothing by a 25-inch noncorrosive, nontoxic, and heat-resistant material looped to form a necklace, and the second tag fastened to the necklace below the first tag by a 2 1/2-inch extension of material similar to necklace. These tags are part of the uniform and will be habitually worn by the owner and may be removed only temporarily as the necessities of personal hygiene may require.

* * *

SECTION III

INSIGNIA AND WEARING THEREOF

* * *

28. Insignia on headgear.--a. Cap, service.--The Army officers' cap insignia, consisting of the coat of arms of the United States, 2 3/8 inches in height, will be worn on the service cap, so attached as to be centered on the welt.

b. Caps, garrison, blue, nurses'.--Insignia of grade will be worn on the left side.

29. Insignia on collar and lapel.

a. Distinctive collar and lapel insignia will be as follows:
(1) Army Nurse Corps.--A caduceus with the letter "N" superimposed thereon.
(2) Hospital dietitians.--A caduceus with the letters H D 1/4 inch in height superimposed thereon.
(3) Physical therapy aides.--A caduceus with the letters P T 1/4 inch in height superimposed thereon.

* * * *

c. Insignia will not be worn on the collar and lapel of the overcoat or raincoat.

30. Insignia on shoulder loop.--Insignia of grade will be worn, and distinctive insignia of organization may be worn on shoulder loop as prescribed for officers of the Army.

31. Insignia on waist.--When the waist is worn without the coat or jacket, insignia of the Army Nurse Corps, or physical therapy aides, or hospital dietitians will be worn on the left side and insignia of grade on the right side of the collar of the waist.

32. Insignia on cape.--Insignia of the Army Nurse Corps, physical therapy aides, or hospital dietitians will be worn on the left side and insignia of grade on the right side of the collar of the cape.

F. A. BLESSE,
Brig. General, USA,
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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

14 September 1943

CIRCULAR LETTER NO. 34

The following notes represent for the most part unpublished data which has been received by the National Research Council from various investigators working under contracts from the Office of Scientific Research and Development.

I - PHARMACOLOGY OF ATABRINE.

The following data deal with the absorption, distribution, degradation and excretion of this drug. It is derived from reports of work done by Dr. James Q. Shannon and his associates in Goldwater Memorial Hospital, New York City.

a. The administration by the intravenous route over a period of 30 minutes of 0.5 grams of atabrine dihydrochloride to six test subjects produced whole blood concentrations of the drug of from 640 to 1090 micrograms per liter. When an additional 0.5 gram of the drug was run intravenously by slow infusion, two of the subjects developed acute toxic reaction, characterized by a respiratory depression, after a total of 0.75 grams of atabrine had been injected. At the end of 24 hours, whole blood concentration of from 171 to 425 micrograms per liter of blood were observed. At the end of 4 days the concentrations of the drug in the blood ranged from 82 to 166 micrograms per liter.

b. Eighteen subjects were given 0.1 gram of atabrine by mouth, three times a day for 5 days. At the end of 24 hours, concentration of from 12 to 84 micrograms of atabrine per liter of blood were recorded. The mean and median values were 51 micrograms. By the end of the 5th day of the test, concentration of from 95 to 624 micrograms of atabrine per liter of blood were noted. The median was 226 micrograms while the mean value was 279 micrograms per liter of blood.

c. Studies were then made upon nine subjects who received an initial intramuscular injection of 0.4 gram and an oral dose of 0.1 gram of atabrine dihydrochloride at 10 P.M. subsequent to this varying amounts of atabrine, spaced at varying periods throughout the day, were administered for several days. Three hours after the initial dose was administered by the intramuscular route, concentrations of from 207 to 537 micrograms of atabrine per liter of blood were noted. The median value was 269 and the mean 306 micrograms. Throughout the remainder of the course of treatment, high concentrations of atabrine were maintained in the blood.

d. Studies were made of the distribution of atabrine in various tissues and fluids of the body. The following values were obtained in two test subjects:

Atabrine Concentration (Microg/liter)	Subject 1	Subject 2
Plasma	90.	89.
Plasma water	14.6	8.9
Cerebrospinal Fluid	4.3	5.4
Erythrocytes	149.	117.
Leukocytes	9500.	18400.
Whole Blood	291.	551.

The following values were obtained for certain tissues in dogs:

Atabrine Concentration (Microg/liter)	Dog 1	Dog 2
Plasma	41	61
Muscle	680	550
Lung	2280	31000
Spleen	15100	57100
Liver	7000	130600

e. Studies upon the excretion of atabrine which have been made both in dogs and in human beings demonstrate, that rarely more than 1% of the amount of atabrine administered as a single dose, and but 5 to 10% of the average daily dose is excreted as such in the urine. The remainder of the injested atabrine becomes progressively degraded, and there is evidence that certain individuals will degrade daily, an amount of atabrine which is essentially equal to the daily dose.

f. A study of these data permits the following conclusions to be drawn:

(1) Atabrine is promptly absorbed either when given by mouth or by an intramuscular route. Its distribution in the blood is such that observations relating to its specific antimalarial action must be related to the concentration of atabrine in the plasma and perhaps, indirectly from this, to the concentration of the atabrine in plasma water. It is also quite clear that the plasma concentration of atabrine though varying widely in different individuals, is related to the amount of drug administered.

(2) Atabrine is rapidly bound by the tissues. This is especially true of the white blood cells, spleen and liver. When bound, the drug is degraded. Excretion plays a minor role in ridding the body of atabrine.

(3) It may be assumed, for the purpose of discussion, that the chemotherapeutic activity of atabrine at any time is a simple function of its concentration in the plasma. "Break-throughs" of clinical malaria during the course of suppressive therapy may occur from two main causes. The first of these relates to the presence in the individual of a malaria parasite which is more resistant to atabrine than is the average, while the second relates to a low concentration of plasma atabrine which may obtain during a period of suppressive therapy.

II - THE RATIONAL THERAPEUTIC USE OF ATABRINE.

The studies which have just been reviewed are extremely important as an approach to the rational use of atabrine in the treatment of malaria. It has been repeatedly shown (the sulfonamide and the 5 day anti-syphilitic regime) that upon the diagnosis of a specific disease, an adequate amount of drug should be administered initially to obtain the desired blood concentration and this latter is then maintained by the serial administration of smaller doses.

a. In view of the results of these studies and of data received from the Office of the Surgeon General, it is recommended that the following regime be considered the method of choice for the treatment of patients ill with uncomplicated malaria.

(1) Dosage atabrine dihydrochloride 0.2 gram (3 grains) and sodium bicarbonate 1 gram (15 grains by mouth with 200 cc of water every six hours for 5 doses, followed by 0.1 gram (1½ grains) three times a day after meals for 6 days. The utilization of this dosage system is rational, practical and will result in a further saving of quinine. It represents a revision of paragraph 3 b (1) of Circular Letter No. 32 issued by the Office of the Surgeon, Hq. MATOUSA.

III - DURATION OF HOSPITALIZATION OF MALARIAL PATIENTS.

The records of a Station Hospital in this theatre show that during August 1943, the average duration of stay in medical installations of patients ill with malaria, and treated with Quinine, Atabrine, and Plasmochin was as follows:

a. Aestivo-autumnal malaria	- 15 days
Benign tertian malaria	- 17 days
"Clinical" malaria (Negative blood film)	- 18 days.

b. It is also of interest to note that the stay in medical installations of patients ill with malaria and evacuated from Sicily, did not differ appreciably from those admitted from the Base Section.

c. Under the Quinine-Atabrine-Plasmochin regime of therapy, many patients who otherwise might have been discharged to convalescent facilities or to duty, were held in the hospital until the course of plasmochin was completed. Under the above recommended system of atabrine therapy (II a. (1)) patients may be sent to convalescent facilities or to duty, as soon after the completion of treatment, as their clinical and physical condition permits.

IV - PENICILLIN.

Supplies of this antibacterial agent (the sodium salt of penicillin) have been received in this theatre and have been allotted to forward medical units for the treatment of gas gangrene. Data collected by the National Research Council show that penicillin is of value in the treatment of severe staphylococcal infection provided a bacterial endocarditis is not present. The results of the use of this agent in pneumococcal pneumonia and empyema are most encouraging. In patients ill with infection produced by the Beta hemolytic streptococcus and which are resistant to sulfonamide therapy, penicillin proved effective. The course of subacute bacterial endocarditis is not influenced by this agent. In general the presence of endocarditis, brain abscess or thrombophlebitis makes the prognosis for recovery under penicillin therapy quite doubtful.

a. Dosage - 10,000 units every two hours or 15,000 units every 3 hours. These amounts of the agent should be dissolved in 3 to 5 cc of distilled water and given by the intramuscular or intravenous route. Penicillin is very rapidly absorbed and as rapidly excreted. The average total doses administered to patients who are severely ill is between 500,000 and 1,000,000 units of penicillin.

b. Toxic reactions. A few minor toxic reactions such as chills, fever, flushing of the face and urticaria have been noted. Because of the hydrogen-ion concentration (on the alkaline side) of solutions of the sodium salt, a certain amount of local irritation occurs following the injection of penicillin.

c. The production of this agent is limited. It will never be abundant. Its use will be restricted to certain selected patients. It is not distributed through ordinary medical supply channels, but information as to where it may be obtained can be gotten from the office of the surgeon of Base Sections, Army or Corps.

V - BENZYL BENZOATE THERAPY FOR SCABIES.

This treatment is ideal for treatment upon a duty status. The solution of benzyl benzoate solution is prepared as follows:

Benzyl Benzoate	25
Green soap	35
Water	40

a. Directions for use. If possible the men bathe with soap and water, dry themselves and then are painted by an attendant over the entire body from the neck to, and over the soles of their feet, with the benzyl benzoate preparation. The solution is allowed to dry before putting on the clothes. About 2 ounces is needed for a treatment. The men are instructed not to wash and the application of the solution is repeated the next day. The emulsion is removed by bathing on the third day. Patients receiving this treatment should not work in handling food in depots, kitchens or mess halls during the course of therapy.

VI - "WAR NEPHRITIS".

Recently captured German medical documents indicate that so-called "war nephritis" developed in their troops during the winter campaigns in Russia. Studies made by the enemy during these outbreaks show that this disease is an acute glomerular nephritis associated with Beta hemolytic streptococcal infection. The term "War Nephritis" like "trench feet" is a misnomer and should not be used in the diagnosis of acute glomerular nephritis.

VII - CHEMOTHERAPY OF BACILLARY DIARRHOEA AND DYSENTERY.

a. No difficulties should be encountered in the use of sulfaguanidine powder, either in hospitals or in field medical installations. A level mess kit spoonful of sulfaguanidine powder weighs 5 grams. A half a mess kit spoonful weighs 5 grams. Hence, roughly one third of a mess kit spoonful of sulfaguanidine taken in 4 to 6 ounces of water every 4 hours day and night until the number of stools is reduced to 5 or less, and then every 8 hours until the stools are normal, represents the desired dosage regime when powdered sulfaguanidine is used.

b. Sulfadiazine is an extremely valuable agent in the treatment of bacillary diarrhoeas and dysenteries. The dose is initially, sulfadiazine 2.0 grams, then administer sulfadiazine 1.0 gram every 6 or 8 hours (depending on the severity of the disease) day and night, for a minimum of 4 days.

c. In as much as it has been repeatedly demonstrated, that the great majority of the diarrhoeas and dysenteries occurring during warm weather in this theater are bacillary in nature, the non-specific treatment of these diseases is not recommended as it has been shown, that relapses are frequent and that carrier states may develop. It is therefore recommended that the use of paregoric and/or bismuth preparations be limited to the treatment (in conjunction with specific chemotherapy) of the early symptoms of colic, griping and tenesmus.

VIII - NUTRITION.

The following data deal with nutritional requirements and the nutritive value of certain commonly used rations.

	Daily Requirements	"C" Ration	"K" Ration	"5-1" Ration	Theater "B" Ration
Total calories	3600.	2674.	3263.	3433.	3689.
Protein component	15-20%				
Carbohydrate component	50-60%				
Fat component	15-25%				
Salt-grams	10.	11.7	6.3(?)	8.3	?
Calcium grams	0.7	0.9	1.86	?	0.7
Phosphorus grams	1.3	2.18	2.68	?	2.1
Iron mgms.	15.0	21.	?	?	[illegible]
Vitamin A.I.U.	5000.	6000.	low	6200.	[illegible]

1234

Thiamine mgms.	2.5	1.6	2.1	1.04	1.8
Riboflavin mgms.	2.5-3.0	1.6	1.9	1.48	2.1
Nicotinic acid mgms.	20-25	27.	17.	17.8	20.
Ascorbic acid mgms.	75.	25.	79.	40.5	60.
Vitamin D.I.U. mgms.	?	?	?	?	?

a. The quoted daily requirements are those for an individual doing a moderate amount of physical exercise or work. The "C" and "K" rations were designed to be used as short term emergency rations and even if fully consumed (?) will result in an increasing caloric and vitamin deficit, if through military necessity, troops must subsist on these rations for prolonged periods of time. These rations have a high salt content and are unpalatable. The "5-1" is a much better balanced ration. The data given in column 4 were derived from "menu No. 1". The nutritive value of the three "menus" which comprise this ration vary. Over a prolonged period of time, troops consuming "5-1" rations should not develop a calorie deficit, but might possibly develop a thiamine, riboflavin or ascorbic acid deficit. Further experience with the "5-1" ration will be necessary to show whether such deficits will develop. The American field "B" ration is varied and when properly prepared is excellent. It is slightly low in thiamine and ascorbic acid.

b. It has been recently shown by Loeb and Keys that the prolonged exposure of the meat items in the "K" ration to high temperature results in a marked loss of thiamine.

c. The issue of vitamin supplements to rations by the quartermaster corps is authorized when, in the opinion of unit commanders, these supplements are desirable. When such supplements are requisitioned or issued to medical installations they should be utilized as an integral part of the ration and not as a form of medication. Vitamin supplements are of value for augmenting the nutritive value of "C" and "K" rations, especially if these rations are to be used for prolonged periods of time.

For the SURGEON:

E. STALDER,
Colonel, M. C.,
Deputy Surgeon.

DISTRIBUTION:

All Medical Units including Supply Depots.
Surgeon, ABS - 200
Surgeon, NBS - 400
Surgeon, EBS - 400
Surgeon, IBS - 300
Surgeon, Fifth Army - 300
Surgeon, Seventh Army - 200
Surgeon, NAAF - 500
Surgeon, Hq. Comd, AF - 50
Surgeon, AMGOT - 50
DMS, AFHQ - 100
Surgeon, NATOUSA - 200

HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

9 September 1943

CIRCULAR LETTER NO. 33

SUBJECT: Dental Reports.

1. To prevent duplication in the reporting of prosthetic operative procedures the following instructions should be observed in the preparation of MD Form 57, (Report of Dental Service) and MD Form 16b (Statement of Expenditure of Special Dental Material).

a. Credit for a prosthetic appliance should only be entered on MD Form 57 by the organization actually inserting the appliance.

b. Organizations having laboratory equipment and constructing appliances for other units should record such appliances on MD Form 16b but should not take credit for same on MD Form 57 unless the appliance was actually inserted by the organization constructing it.

c. A unit having laboratory equipment should enter on MD Form 16b all appliances constructed or repaired whether precious materials have or have not been used. If no gold was expended the entry "No Gold" should be entered in the "Weight" column of paragraphs 1 and 2 of report.

2. In the future the accomplishment of the Maxillo Facial Form, Office of the Surgeon, NATOUSA, will not be required.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

DISTRIBUTION:

All Dental Officers.

ABS	100
MBS	150
EBS	100
Center District, MBS	50
NAAF	150
Hq Command, AF	50
Fifth Army	100
Seventh Army	100
Surgeon, NATOUSA	100
IBS	100

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H E A D Q U A R T E R S
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

3 September 1943

CIRCULAR LETTER NO. 32

SUBJECT: A Revision In The Therapy of Malaria.

1. As a result of observations made in NATOUSA and of the receipt of recent information upon the subject, it is considered that the routine use of plasmochin in the treatment of uncomplicated malaria is unnecessary. The reasons for abandoning the routine use of plasmochin are as follows:

a. Plasmochin has very little plasmodicidal effect upon malarial parasites except in the gametocyte stage.

b. It is the opinion of experienced malariologists in the A.U.S., that, as a result of eliminating routine plasmochin therapy in U.S. troops, adult gametocyte carriers will not increase the present rate of mosquito infection from troop sources.

c. The reported reduction in malarial relapses in primary cases, by the use of plasmochin therapy has not been confirmed.

2. As plasmochin is more toxic than atabrine or quinine and of limited therapeutic value, it should only be used in selected relapsing cases who possess a heavy gametocyte concentration in their blood and who cannot be adequately protected from anopheline mosquitoes. It is recommended that the plan outlined in Circular Letter No. 6, Office of the Surgeon, Hq. NATOUSA, Paragraph 3 a (1) for the treatment of uncomplicated malaria be abandoned.

3. The following plan of therapy is recommended for the treatment of patients ill with uncomplicated malaria.

a. Combined Quinine Atabrine (QA) Therapy.

(1) Quinine sulfate, 0.64 grams (10 grains) by mouth three times daily after meals until the temperature is normal. Then give atabrine, 0.1 gram (1½ grains) three times daily after meals for 5 days.

b. Atabrine Treatment (May be used if desired).

(1) Atabrine dihydrochloride 0.2 grams (3 grains) and sodium bicarbonate 1.0 grams (15 grains) by mouth three times a day after meals for 5 days.

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c. Parenteral therapy. If the patient is vomiting or the malaria is severe, parenteral therapy is indicated and the recommended dosage is as follows:

(1) Quinine dihydrochloride 0.64 grams (10 grains) dissolved in 300 or 400 cc of sterile physiological saline solution should be administered by the intravenous route. This treatment may be repeated in 6 to 8 hours if the situation warrants its use. When the patient can take and retain oral medication a complete Quinine-Atabrine course as outlined in 3 a (1) should be administered.

(2) If quinine dihydrochloride is not available atabrine dihydrochloride administered by the intramuscular route may be used, 0.2 grams (3 grains) of the drug dissolved in 5 cc of sterile distilled water should be injected into each buttock (total 0.4 grams or 6 grains). If necessary one or more additional doses may be given intramuscularly at intervals of 6 to 8 hours. As soon as the patient can take and retain oral medication, atabrine should be given by mouth in such doses as to give a total by both routes together, of 1.0 gram in 48 hours, followed by 0.1 gram (1½ grains) 3 times a day after meals for 5 days.

4. Admission and discharge blood films.

a. Blood films should be secured before malarial therapy is initiated. Every effort should be made to establish the etiological diagnosis before specific therapy is started. However, this injunction does not mean that treatment should be unduly delayed (over 8 hours in severe cases) in patients presenting typical clinical symptoms and signs of malaria.

b. An attempt should be made to obtain and properly examine blood films before discharge from every patient who has been diagnosed malaria or who has been suspected of having this disease.

For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:
All Medical Units Including Supply Depots.

Surgeon, ABS	- 300
Surgeon, MBS	- 500
Surgeon, EBS	- 500
Surgeon, V Army	- 600
Surgeon, VII Army	- 300
Surgeon, NAAF	- 400
Surgeon, Hq. Command, AF	- 50
Surgeon, AMCOT	- 25
D.M.S., AFHQ	- 100
Surgeon, NATOUSA	- 200

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

30 August 1943

CIRCULAR LETTER NO. 31

Tentative Changes in Medical Department Equipment Lists

The following tentative changes in Medical Department Equipment Lists have been authorized from time to time and are compiled herein for the information and guidance of all concerned.

I 1000 BED GENERAL HOSPITAL T/E 8-550, 19 March 1943.
(Med. Dept. Equip. List #97225 dated 12 July 1942)

Basic Equipment Lists of 1000 Bed General Hospitals are authorized to include:

MEDICAL

Number	Item	Amount
37145	Perimeter, Hand	1

II 750 BED EVACUATION HOSPITAL T/E 8-560, 23 April 1943.
(Med. Dept. Equip. List #97225, dated 16 July 1943)

Basic Equipment Lists of 750 Bed Evacuation Hospitals are authorized to include:

MEDICAL

Number	Item	Amount
33400	Knife, plaster	10
34320	Procto-Sigmoidoscope, electric	1
41390	Centrifuge, Electric, Small	1
43170	Microscope, Dark Field, Apparatus	1
44790	Heater, Bath, Serological	1
60470	Bed, sheet	16
71710	Robe, bath	270
73315	Opener, can, large, bracket type	3
73710	Pot, stock, 60 qt.	4

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MEDICAL Cont.

Number	Item	Amount
75150	Book, blank (X)	50
75690	Numbering machine	1
76517	Machine, sewing, treadle type	1
78800	Pitcher, 4 qt. enamelware	18
92100	Case, ward, complete,	10
96070	X-Ray Field Unit, grid, portable (Only when not already part of item 96145)	1
97455	Blanket set, large	25
99215	Cup, enamelware, nesting	550
99395	Mattress Pad, cotton	700

ORDNANCE

	2½ Ton 6 x 6, Water Tank, 700 Gal.	1

SIGNAL

	5 KW Generators	2

QUARTERMASTER

	Tent, hospital, ward	3
	Tent, storage	5
	Tent, large, wall	3

III 400 BED EVACUATION HOSPITAL T/E 8-561, 6 January 1943.
(Med. Dept. Equip. List #97223, dated 16 July 1943)

Basic Equipment Lists of 400 Bed Evacuation Hospitals are authorized to include:

MEDICAL

Number	Item	Amount
25520	Tube, Miller-Abbot, Complete	9
37750	Suction apparatus, portable, electric	2
41370	Centrifuge, metal tube, 15 cc	1
41390	Centrifuge, electric, small	1
43170	Microscope, Dark field, Apparatus	1
44790	Water, Bath, Serological	1
60310	Goggles, operator's	2
60470	Lead, sheet (.)	15
71670	Filler, funnel	200
75390	Cutter, paper	1
77870	Cylinder, Oxygen, 150C Cal. filled	15
78517	Machine, sewing, treadle-type	1
96070	X-Ray Field Unit, grid, portable (Only when not already part of Item 96145)	1
99305	Irrigator stand, folding	18
99376	Litter, steel pole	40
99395	Mattress Pad	400
99617	Adding Machine	1
60020	Apron, lead	3
60300	Glo[illegible], opaque	2

CHEMICAL

Item	Amount
2½ Ton, 6 x 6, Water Cont. (700 Gal.)	1

ENGINEER

Generator, 5 Kw	2
Unit, Pumping, Water-Hypor-chlorinator	1

QUARTERMASTER

Desk, Fibre, Field No. Size	1
Drum, Gasoline, Steel, 5 Gal.	6
Heater, Water Assembly	6
Range, Field, M-1937, Complete 3 Unit (In place of 1-2 unit now authorized)	1
Tent, Hospital, Yard	2
Typewriter, non-portable (In place of 5 portables now authorized)	3
Paulin, Canvas, 17' x 40'	12
Table, Field, Folding	24

The following items are hereby deleted from Basic Equipment Lists for 400 Bed Evacuation Hospital:

MEDICAL

Number	Item	Amount
20220	Gauze, plain, 25 yards	All stocks
37360	Splint, basswood	All stocks
37390	Splint, Cabot	All stocks
37480	Splint, Thomas, arm, hinged	50
37545	Splint, wrist, cock-up	10
72300	Cart, Food, Drinkwater, complete	5
97565	Chest, ID #1	1
97570	Chest, ID #2	1
99175	Carrier, field, collapsible	All stocks

IV FIELD HOSPITAL T/E 8-510, 5 April 1943.
(Med. Dept. Equip. List #97327 dated 13 July 1942)

Basic Equipment Lists of Field Hospitals are authorized to include:

MEDICAL

Number	Item	Amount
93500	Anesthesia Apparatus, Portable	3

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V AUXILIARY SURGICAL GROUP T/E 8-571, 12 July 1942.
(Med. Dept. Equip. List #97203, dated 11 Nov. 1742)

Basic Equipment lists of the 2nd and 3rd Auxiliary Surgical Groups are amended to include:

MEDICAL

Number	Item	Amount
36703	Electro-Surgical Unit, Portable	4
37740	Stethoscope, tubing	100 ft.
37750	Suction, Apparatus, Portable, electric	4
70950	Table, Instrument	10
70794	Table, Orthopedic	5
74690	Bucket, 15 qt.	10
77110	Basin, hand	30
77855	Cylinder, Oxygen, filled 80 gallon	4
77890	Cylinder, valve adapter, M.F.	3
79440	Litter, complete	10
85527	Machine, Sewing, treadle type	1
78800	Pitcher, 4 qt.	10
79400	Tray, Instrument	10
93506	Anesthesia Apparatus, portable	4
97535	Chest, field, plain	20
99525	Sterilizer, Instrument	5
99600	Unit, Power, Electric	5
99617	Washing Machine, household type	1
99630	Sterilizer, dressing	5
99683	Tools, Instrument	10
99690	Table, Operating	10

QUARTERMASTER

Heater, Unit, Water (193?)	5
Screen, Latrine	4
Tarpaulins, Canvas (12 x 17 ft.)	5
Tent, Fly, Small, Wall	4
Tent, Hospital, complete	40
Tent, Storage, complete	4
Tent, small, wall, complete	4
Tent, Wall, large, complete	5

ENGINEER

Electric Light Socket	60
Electric Wire	250 ft.
Electric Outlets, male plugs	10
Electric Outlets, female plugs	10

ORDNANCE

Truck, 2½ Ton, 6 x 6, w/tools	5
Truck, 3/4 Ton, 4 x 4, Weapons Carrier	5
Trailer, 1 Ton, Cargo	5
Trailer, Water, 250 Gallon	5

VI INFANTRY BATTALIONS OR COMPARABLE TACTICAL UNIT.(T/BA-8, dated 15 July 1942)

MEDICAL

Number	Item	Amount Reduced to
97764	Kit, First Aid, Gas Casualty	6 Each

VII REGIMENTAL AID BATTALION AID STATIONS.(T/BA - 8, dated 15 July 1942)

MEDICAL

99550	Stove, 1 Burner, Gasoline	(1 per Dental Sterilizer)

QUARTERMASTER

Tent, Wall, Small, Complete with Fly, Pins and Poles	(1 per 2 Dental Officers of Regt'l & Sep. Bns. when required for duty in field)

VIII DIVISIONAL MEDICAL SERVICE. (T/BA - 8, dated 15 July 1942)

MEDICAL

97115	Kit, Medical Officer's	(1 per Dental Officer Regt'l or Sep. Bn. when authorized by CO for combat duties)

H.C. Kane

F. A. BLESSE,
Brig. General, USA,
Surgeon

DISTRIBUTION:

SURGEON, Fifth Army	500
SURGEON, Seventh Army	400
SURGEON, AAS	75
SURGEON, CBS	100
SURGEON, IBS	150
SURGEON, NTSF	25
SURGEON, Hq Command AF	20
SURGEON, NATOUSA	100

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H E A D Q U A R T E R S
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

28 August 1943

CIRCULAR LETTER NO. 30

SUBJECT: SELECTIONS OF SHADES AND MOLDS FOR ARTIFICIAL TEETH.

1. The Army Dental Corps is using both the New Hue and the New Trubyte teeth. To facilitate the selection of these, a conversion table is herewith presented, as well as a table to assist in choosing teeth and matching the upper anteriors with the posteriors and lower anteriors. These tables may also be found in W.D. Technical Manual, TM 8-225, entitled "Dental Technicians", January 28, 1942, Paragraph 42, which reads as follows:

"The following charts give the assortment of teeth chosen for the central dental laboratories for shades and molds. The data given in b. below assist in choosing teeth and matching the lower anteriors and posteriors with the upper anteriors. The shades of the New Hue and the New Trubyte teeth, as selected for Army use, are given below, with the corresponding shades for Old Trubyte teeth:"

a. Shades

New Hue	New Trubyte	Old Trubyte
63	40	5
66	41	6
67	43	7
77	46	9
81	49	14
69	52	15
79	55	16
83	57	20

b. Data. - (1) Upper anteriors, 1 x 6. - (a) Square type.

Mold No.	Width of central (mm)	Posteriors required	Lower anteriors required
115	8.5	34M - 31L	25
117	9.5	34L - 35L	27
123	7.5	30L - 29L	33
124	8	32L - 31L	34
126	9	34L - 33L	36
133s	7.5	30M - 29M	43s
134	8	32M - 31M	44
135s	8.5	32L - 31M	45s
136s	9	34M - 33M	46s
155	8.5	32M - 31M	34

F. A. BLESSE,
Brig. General, USA,
Surgeon.

DISTRIBUTION:
All Dental Officers.

ABS	100
MBS	150
EBS	100
NAAF	100
Hq Command, AF	50
Fifth Army	150
Seventh Army	100
Surgeon, NATOUSA	100

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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

25 August 1943

CIRCULAR LETTER NO. 29

SUBMISSION OF STATISTICAL REPORT (W.D., M.D. FORM NO. 86ab)
BY OVERSEA COMMANDS

1. Attention is directed to Section VII, W.D. Circular No. 160 dated 13 July 1943 which introduces radical changes in completion and transmittal of Statistical Report, W.D., M.D. Form No. 86ab, by overseas commands. Pending revision of AR 40-1080 and Circular No. 11, AFHQ, dated 23 January 1943, this directive will govern transmission of this report. The report will be submitted in two sections as follows:

a. Weekly Telegraphic Report. This report replaces the weekly Statistical Report, WD MD Form No. 86ab, required previously and will not be considered a supplement to it. The following instructions will govern preparation of this report.

(1) Code letters will be used as a substitute for headings.

(2) Compiling. The telegram will be compiled for the 7 day period ending midnight Friday and prepared as follows, the capital letters given being those appearing on the form (WD MD Form No. 86ab), except R which is defined in (3) below:

A - Designation of reporting unit, e.g. 10 Army.
B - Last day of period covered by report, e.g. 4 January.
E - Number of patients admitted from command since last report, e.g. Disease 20, injury 15, battle casualties 2.
J - Number of deaths since last report, e.g. Disease 2, injury 5, battle casualties 6.
L - Number remaining on last day of report period, e.g. Disease 25, injury 10, battle casualties 12.
M - Number of patients fit for evacuation to ZI, e.g. 100.
N - Number killed in action since last report, e.g. 50.
P - Number of beds available. (Fixed beds represent total capacity of numbered station, general and field hospitals; all other beds are non-fixed). e.g. Fixed hospitals 200, non-fixed 100.
Q - Number of beds occupied, e.g. Fixed 150, non-fixed 75.

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R - Percentage non-effective on last day of report period, e.g. 2.5.

S - The number of the following communicable diseases: Total respiratory, malaria, total intestinal, venereal disease (all types), plus any communicable disease (specify) of threatening epidemic importance, e.g. Total respiratory 100, malaria 50, total intestinal 83, V.D. (all types) 22, yellow fever 2.

(3) Percentage non-effective on last day of report received. The percentage non-effective will be the percent of Army personnel remaining in quarters or hospital on the last day of the report period.

(4) Form of telegraphic report. The complete telegraphic report using sample figures of Paragraph (2) will appear as follows:

CG NATOUSA ATTENTION SURGEON

A TENTH ARMY B FOUR JANUARY E DISEASE TWENTY INJURY FIFTEEN BATTLE CASUALTY TWO J DISEASE TWO INJURY FIVE BATTLE CASUALTY SIX L DISEASE TWENTY FIVE INJURY TEN BATTLE CASUALTY TWELVE N ONE HUNDRED N FIFTY F FIXED TWO HUNDRED, NONFIXED ONE HUNDRED G FIXED ONE HUNDRED FIFTY, NONFIXED SEVENTY-FIVE R TWO POINT FIVE S TOTAL RESPIRATORY ONE HUNDRED MALARIA FIFTY TOTAL INTESTINAL EIGHTY-THREE VENEREAL DISEASE TWENTY TWO YELLOW FEVER TWO

(5) Effective date of changeover for Weekly Telegraphic Report. The first Weekly Telegraphic Report will be submitted for the week-ending 17 September 1943.

(6) Transmission of telegraphic report. Surgeons of base sections, armies, separate corps and air force will direct units within their jurisdiction as to most expeditious means of transmitting the required information in light of their own situation. These surgeons will in turn consolidate reports and submit them so as to reach the Surgeon NATOUSA, before 1200 hours the following Tuesday.

b. Monthly Report on WD MD Form No. 86ab.

(1) In addition to the weekly telegraphic report, all sections of WD MD Form No. 86ab, to include data up to midnight of the last day of the month, will be rendered monthly by air mail, commencing 30 September 1943.

(2) Pending the revision of WD MD Form No. 86ab, there will be added to the present form, Second Section, two categories of neuropsychiatric disease, namely, psychiatric disease and organic neurological disease. The vertical columns of the second section of the form will be employed in the usual fashion, except that column 3 will be subdivided (for these two diagnoses

only) into "duty" and "otherwise disposed of".

(3) Transmission of Monthly Statistical Report WD MD Form No. 86ab. Except that the new report covers a period of one calendar month rather than a seven day period, the report will be submitted through the same channels as formerly and will be consolidated in the usual manner.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

DISTRIBUTION:
To All Medical Units

Surgeon, Fifth Army	- 600
Surgeon, Seventh Army	- 500
Surgeon, ABS	- 400
Surgeon, MBS	- 500
Surgeon, EBS	- 500
Surgeon, IBLAF	- 500
Surgeon, Hq. Comd, AF	- 25
Surgeon, NATOUSA	- 300

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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

20 August 1943

CIRCULAR LETTER NO. 26

I - DIAGNOSIS, TREATMENT AND HOSPITALIZATION OF THE VENEREAL DISEASES

The following amendments and revisions are made to Circular Letter No. 10, Office of the Surgeon, Hq. NATOUSA, Subject: DIAGNOSIS, TREATMENT AND HOSPITALIZATION OF THE VENEREAL DISEASES, dated 10 April 1943.

1. Paragraph 2 c (1) is amended to read as follows:

(1) Uncomplicated acute gonorrhea may be treated on a duty status. Duty status treatment should be initiated by the surgeon with the approval of the commanding officer of the organization concerned. Duty status treatment of acute gonorrhea will be strictly limited to one course of sulfathiazole or sulfadiazine. Patients who fail to show satisfactory response to this therapy will be hospitalized not later than the fifth day following completion of the course.

2. Subparagraph d is added to paragraph 2.

2. d. Chancroid.

(1) All complicated and/or extensive non-syphilitic penile ulcers will be hospitalized until healing processes are well established.

(2) Uncomplicated penile ulcers.

(a) All penile ulcers will receive three darkfield examinations on successive days. In units where these examinations may be secured without excessive use of transportation facilities or interference with duty they may be carried out on a duty status. In all other instances penile ulcers will be hospitalized for the necessary period.

(b) Whether darkfield examinations are carried out on a duty status or in hospital, oral sulfonamide therapy will be initiated immediately following the first negative and local therapy will be initiated immediately following the third negative darkfield.

(c) Patient's status (duty or hospital) following the third negative darkfield will be determined by clinical response, but patients will not be hospitalized until ulcers are completely healed unless definite indication for such procedure exists in the individual case.

3. Paragraph 3 d is revised to read as follows:

d. Serologic tests for syphilis. All patients with gonorrhea will be given a serologic test for syphilis before being discharged as cured and within twenty-one days following the diagnosis of gonorrhea. Two additional serologic tests will be performed at monthly intervals.

4. Subparagraphs 3 e (3) (a) and (b) are revised to read as follows:

(a) The recommended dosage for sulfathiazole and sulfadiazine where patients are treated on a duty status is 4 grams (60 grains) initially and 1 gram (15 grains) four times a day for five days. All doses must be accompanied by copious quantities of fluid.

(b) The recommended dosage where patients are hospitalized is 6 grams (90 grains) initially and 1 gram (15 grains) every 4 hours for five days.

5. Paragraph 3 f (3) is revised to read as follows:

(3) Fever therapy. Where facilities are available combined sulfonamide and fever therapy should be administered to cases who have resisted two courses of sulfonamide therapy. In such cases the administration of further sulfonamide without fever is of little value and frequently only serves to increase treatment resistance. The following methods are recommended for inducing fever:

(a) Interrupted dose, intravenous typhoid.

(b) The intravenous typhoid saline drip.

(c) Hydrotherapy.

II - DIAGNOSIS, TREATMENT AND EVACUATION OF MALARIA PATIENTS.

1. To facilitate handling of malaria patients in areas where hospital beds are needed the statistical reporting of unconfirmed clinical diagnosis of malaria will be permitted with the following limitations.

a. Whenever possible clinical diagnosis of malaria will be confirmed by blood smear findings.

b. Where time and facilities are not available for adequate laboratory studies and the completion of this work will delay treatment of the case for over 24 hours, patients whose condition warrants a clinical diagnosis of malaria will have treatment started promptly after thin and thick smears

are obtained for laboratory study. Smears are most apt to be positive 24 to 30 hours after the chill. Where possible smears will be studied locally to confirm the diagnosis or if the patient is transferred, smears if unconfirmed, will accompany the patient.

c. Standard terms used for reporting diagnosis of malaria will be as follows:

4730 - Malarial fever, estivo-autumnal
4740 - Malarial fever, mixed (two or more of the malaria species present)
4750 - Malarial fever, quartan
4760 - Malarial fever, tertian
4770 - Malarial fever, unclassified (malaria parasites present in blood smears but unable to classify)
4775 - Malarial fever, clinical (clinical malaria fever, with specific response to anti-malarial drugs but unable through lack of facilities to confirm diagnosis of blood smear findings)

2. Where conditions require it, patients under treatment for malaria may be transferred after the completion of the quinine and atabrine therapy. If such transfers are made a statement will be entered on the MT that Plasmoquine therapy has not been given. When facilities become available uncomplicated cases of malaria who have received their quinine and atabrine therapy may be transferred to convalescent wards or hospitals in the vicinity for completion of Plasmoquine therapy and reconditioning for return to their units.

For the SURGEON:

E. STRUBLE,
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:
To all Medical Units
Surgeon, Fifth Army - 500
Surgeon, Seventh Army- 400
Surgeon, ABS - 400
Surgeon, EBS - 400
Surgeon, ERS - 400
Surgeon, NAAF - 400
Surgeon, Hq. Comd,AF - 50
Surgeon, NATOUSA - 150
DMS, AFHQ 200

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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

20 August 1943

CIRCULAR LETTER NO. 27

SUBJECT: Donation of Blood for Transfusion and Other Purposes. Act, July 30, 1941 (Public Law 196, 77th Congress).

1. The attention of all concerned is invited to AR 40-1715, dated December 31, 1941. The statutory provisions of this regulation limit the sum that may be paid to "such reasonable sum, not to exceed $50, for each blood withdrawal as may be determined by the head of the department or independent agency concerned". This limitation is in accordance with the Act of Congress July 30, 1941. This act tended to liberalize the purposes for which blood could be withdrawn from its former restriction of blood being withdrawn only for the purpose of transfusion into the veins of a recipient. The present act, in addition, now permits payment to one who "shall furnish blood for blood banks or for other scientific and research purposes in connection with the care of any person entitled to treatment at Government expense".

2. Discussing the question of charge by donors who are members of the Military Establishment or civilian employees of the Government:

a. In the past, it has been the custom to pay a reasonable fee for blood withdrawn, that is, at the rate of $15 for venipuncture, plus $2 for each 100 cc of blood withdrawn. The act which was formerly considered of heroic proportions is now so commonplace that hundreds of thousands of donors are contributing blood to the American National Red Cross without reimbursement. It has been ascertained that the average commercial cost of blood does not exceed $7.50, and much of the commercial blood is obtained at $5. Therefore, it is desired that responsible Medical Department officers, requiring blood for treatment of patients, apprise prospective donors that payment not to exceed $10 will, henceforth, be allowed. In order that persons furnishing blood for transfusions may be paid promptly, payment may be made locally, except as indicated otherwise in this circular letter, (see paragraph 2 b (3) below). Vouchers (WD Forms 25 and 25a) covering costs of transfusions may hereafter be submitted to local finance officers for all cases in which local payment is authorized, charge for such local payments of $10.00 to be made to appropriation M & HDA 1942-44 6-5000 P413-07 212/40305 which is an open allotment. A copy of each voucher upon which local payment is made, should be submitted to The Surgeon, NATOUSA, through the Surgeon of the Army or base section concerned, at the close of each month.

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b. Under exceptional circumstances, no limitation upon fees for blood withdrawal will be made other than that fixed by law at $50. As

illustrations of exceptional circumstances per this subparagraph, the following may be cited:

(1) The case of donors who because of previous attacks of the disease possess certain antibodies against poliomyelitis, streptococcus infections, etc., and who because of their particular blood qualities might well demand, and the Government readily accede to, a fee as much as the limiting fee of $50.00.

(2) Blood withdrawals at isolated stations where donors may be scarce and blood may be obtainable only at fees approaching $50.

(3) Vouchers covering charges in excess of $10 for blood withdrawals under exceptional circumstances will be forwarded to the Surgeon, NATOUSA for approval and payment through channels, by letter of transmittal containing detailed report of the exceptional circumstances in connection with the service.

3. The provisions of the foregoing paragraph respecting rates for blood withdrawals have application to all donors who are receiving salaries from the United States Government including members of the Military Establishment, and civilian employees of the Government, whether the transfusion is in an Army hospital or in a civilian hospital.

4. For donors who are not in the service of the United States Government, it is believed that the foregoing directives should apply, that is:

a. A fee not to exceed $10.

b. If a is not possible, local rates should apply except that in no case should the fee exceed $50 which is the limitation set by law.

5. There is no provision under the present law prohibiting the use of donors who are in the service for transfusion to patients in civilian hospitals, provided that the patient is entitled to and undergoing treatment at Government expense.

For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:
To all Medical Units.
Surgeon, Fifth Army - 500
Surgeon, Seventh Army - 400
Surgeon, ABS - 400
Surgeon, MBS - 400
Surgeon, EBS - 400
Surgeon, NAAF - 400
Surgeon, Hq. Comd, AF - 50
Surgeon, NATOUSA - 150

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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

13 August 1943

CIRCULAR LETTER NO. 26

I - SAFETY PRECAUTIONS IN THE USE OF OXYGEN.

1. Use of oxygen necessitates certain safety precautions which are enumerated herein for the strict compliance of all concerned.

a. When an oxygen tank has been emptied to 50 pounds pressure per square inch it must be considered empty and the valve shut off. Failure to do this results in moisture entering the tank and causing the tank to rust.

b. No oil or grease is to be used about the equipment because of the fire hazard. If oil or grease does get on the equipment it should be cleaned off with carbon tetrachloride, not with gasoline.

c. Under no circumstances should oxygen tanks be handled roughly or dropped.

d. All oxygen cylinders will be painted green and repainted as often as necessary.

e. All rubber parts will be cleaned with soap and water and carefully air dried. They will be stored away from heat and direct sunlight.

f. Oxygen will not be employed in the presence of flame. When oxygen is in use in a ward, "No Smoking" signs will be displayed and compliance with them insisted upon.

II - DANGER OF FIRE IN GAS CASUALTY CHESTS.

1. Due to the danger of fire, all gas casualty chests within this theatre will have the calcium hypochlorite removed from the chest at once and carried separately.

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III - DISPOSAL OF EXPOSED X-RAY FILM.

1. Exposed X-Ray films will, in all instances accompany patients through the various stages of evacuation.

2. Exposed X-Ray films not considered to have any further value may be disposed of every three (3) months by turning them over to the salvage officer.

3. Those films which have scientific interest will be stored for the organization by Medical Supply Depots of Base Sections.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

DISTRIBUTION:
All Medical Units including
Supply Depots.
CG, ABS - 400
CG, MBS - 400
CG, EBS - 300
CG, 5th Army - 550
CG, 7th Army - 400
CG, NAAF - 385
CO, Hq. Command - 50
Surgeon, NATOUSA - 200

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H E A D Q U A R T E R S
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

4 August 1943

CIRCULAR LETTER NO. 25

SUBJECT: Test for Atabrine (Mepacrine) in Urine.

1. No ordinary laboratory test can be relied upon to show the presence of atabrine in the urine until there is a considerable concentration of the dye in the body. Clear cut positive results may not be obtained until 6 doses (0.6 grams) have been taken. Thereafter it is unmistakable.

2. The procedure is as follows:

a. Collect about 200 cc of urine in a glass stoppered bottle or any glass container. The urine should not come in contact with rubber or cork stoppers. (If a glass stoppered bottle is not available, the bottle can be closed with a finger while the ether extraction is being performed.)

b. Render the urine strongly alkaline to litmus paper by using either sodium or potassium carbonate.

c. Filter off the precipitated phosphates.

d. To the urine filtrate add about 20 cc of ether and shake well. (This extraction is best done in a separatory funnel.)

e. A syrupy mass usually separates along with the ether layer. Separate the syrupy mass and the ether from the urine.

f. Separate the syrupy mass from the ether by adding more ether if necessary.

g. Place 5 cc of the ether layer in a test-tube.

h. Evaporate the ether containing the atabrine in a water bath. (If this ether extract is distinctly yellow it is a good indication that atabrine is present.)

i. To this residue remaining in the test-tube add about 1 cc of 50% acetic acid.

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j. In the presence of atabrine, a distinct yellow color is produced which gives a slight flouresecence if viewed against a dark background with transmitted light.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

DISTRIBUTION:

CG, Fifth Army	- 600
CG, ASS	- 500
CG, IBS	- 600
CG, IBS Center District	- 200
CG, ZBS	- 600
CG, NAAF	- 450
CG, Force 141	- 400
CG, Hq. Comd., AF	- 50
Surgeon, NATOUSA	- 350

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H E A D Q U A R T E R S
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

26 July 1943

CIRCULAR LETTER NO. 24

SUBJECT: Amendment of Circular Letter No. 21, Office of the Surgeon, NATOUSA, U.S.

1. So much of the introductory paragraph of Circular Letter No. 21, Office of the Surgeon, NATOUSA, c.s., as reads, "for compliance of all concerned", is hereby amended to read, "for information of all concerned".

2. Paragraph 3, "Hours of Duty", of Circular Letter No. 21, WD SGO, 28 May 1943, which is quoted in Circular Letter No. 21, Office of the Surgeon, NATOUSA, c.s., is now applicable to this theater of operations.

For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

DISTRIBUTION:

To all hospitals and general dispensaries.
CG, [illegible] - 125
CG, [illegible] - 125
CG, [illegible] - 125
CG, [illegible] - 25
CG, WTI Army - 40
CG, NAAF - 10
Surgeon, NATOUSA - 50

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H E A D Q U A R T E R S
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

2 July 1943.

CIRCULAR LETTER NO. 23

Subject: Military Malaria Control.

Circular Letter No. 22, WD SGO, 16 Jan. 43, subject as above, is herewith reproduced for the information of all concerned within the limits of this theater of Operations:

"1. Introduction. The purpose of this letter is to provide Medical and Sanitary Corps officers with some practical details of measures for the control of malaria under military conditions.

2. Classification of control measures. Military malaria control requires the protection of troops in movement as well as in fixed positions. In each of these two situations both group and individual control measures must be considered. This is the basis for the following classifications.

a. Measures applicable to fixed installations.
   (1) Environmental measures.
      (a) Protection against adult mosquitoes.
         (1) Selecting camp site.
         (2) Screening buildings.
         (3) Spray-killing with pyrethrum extract.
      (b) Control of mosquito larvae.
         (1) Draining.
         (2) Filling.
         (3) Using larvicides.
         (4) Miscellaneous.
   (2) Individual measures.
      (a) Curative treatment.
      (b) Sleeping nets (mosquito bars).
      (c) Repellents.
      (d) Protective clothing.
      (e) Malaria instruction and discipline.
b. Measures applicable to field operations.
   (1) Individual measures.
      (a) Sleeping nets (mosquito bars).
      (b) Repellents.
      (c) Protective clothing.
      (d) Prophylactic treatment.
      (e) Malaria instruction and discipline.

(2) Environmental measures.
(a) Protection against adult mosquitoes.
(1) Spray-killing with pyrethrum extract.
(2) Selecting suitable camp sites.
(b) Control of mosquito larvae.
(Should be carried out whenever feasible)

3. Fixed installations. Effective control of malaria in permanent and semipermanent camps, posts, fields, and stations requires a high degree of cooperation and malaria discipline. Responsibility for malaria control is vested in the commanding officer who depends on Medical and Sanitary Corps officers for surveys, recommendations, and supervision, on Quartermaster and Engineer Corps officers for antimalaria supplies, equipment, and labor, and frequently on the latter corps for prosecution of control measures. Adequate protection in highly endemic areas is not possible without teamwork in planning, accomplishment, and maintenance of the antimalaria measures outlined below.

4. Proper selection of camps. The selection of a suitable camp site is an important antimalaria measure. Malaria is a communicable disease, with mosquitoes acting as the vectors. A native village in which there are numerous infected persons is a health hazard to troops which camp within flight distance of the malaria-carrying mosquito. So, too, a large breeding place of these mosquitoes, if located within easy flying distance of a camp, is a menace. The effective flying range of malaria mosquitoes rarely exceeds a mile in the tropics but is apt to be more than this in temperate zones, or under exceptional conditions of wind or terrain in the tropics. As a general rule, camps should never be located nearer than a mile from malarious villages or important breeding places of malaria mosquitoes. The importance of a breeding place depends not on its appearance or altogether on its size, but on the malaria-carrying capacity of the mosquitoes breeding in it. It is equally important, where feasible, not to allow natives to live on a military reservation, or within a mile of military quarters, for they will provide an active replacement pool of gametocytes.

5. Screening. The following general principles should be observed if screening is to give its full value as an antimalaria measure.

a. Suitable wire of proper mesh should be used. Many types of wire screening are made. Steel wire cloth is most common, either painted or electrogalvanized. The quality of paint and of galvanizing may vary greatly in different lots of wire. Pure copper wire, bronze wire (90 percent copper, 10 percent tin), monel wire (nickel-cobalt alloy), stainless steel, and aluminum have all been used. In most areas a good quality electrogalvanized screen will be satisfactory but in the tropics, especially along the sea, it is better to use wire of a noncorrosive material, such as bronze or aluminum. A hard drawn wire, 99.8 percent copper, and of heavy grade (having a diameter of 0.015 inch) is suitable. Aluminum wire screening is also good.

The diameters of wire and aperture are important. In general, it is not safe to use screening which has apertures larger than 0.0475 inch in diameter. Heavy grade copper wire screening, having 16 meshes to the inch, will have a wire diameter of 0.0150 inch and a mesh diameter of 0.0475 inch, but regular 16-mesh wire screening has an aperture of mesh measuring 0.0512 inch, which will not exclude all malaria vectors and will not keep out Aedes species. Standard 18-mesh wire screening has a wire diameter of 0.0090 to

to 0.0100 inch and a mesh which is 0.0436 inch in diameter.

b. The screening must be so applied that breakage will be minimal, and that the doors and windows will not facilitate mosquito passage. For instance, screen doors should open outwards, and should be on the windward side of a building, if possible. They should be strongly constructed so that they will not sag or warp. They require springs so that they will close automatically. The places where a foot or hand would naturally be applied to open a screen door should be protected with a cross strip of wood or metal. Screen doors should shut against battens, which are strips of wood or metal, to block entry of mosquitoes through the space between door frame and door.

The zinc in certain paints sometimes used on door or window screen frames and the iron in galvanized nails sometimes used to fasten screening to a frame will react with copper screening and cause splitting at the point of contact.

In highly malarious areas it is desirable to have double screen door barriers with a vestibule between.

c. Careful attention must be paid to the closing of all possible apertures not screened, such as cracks and knotholes, spaces where floor or wallboards have separated, openings between flooring and walls, corner openings where joists come together, holes where window shutter prop-sticks extend into a room for easy handling, ventilating pipes and shafts, etc. Holes may be covered with tin shingles or pieces cut from ordinary tin cans. A filler for holes and cracks may be made by boiling shredded paper and flour into a fairly homogenous mass and then adding sand and cement to form a plastic which may be moulded into the holes. This filler is somewhat pliable and will retain its place fairly well. Toilet paper is a suitable tissue for use in making this filler.

d. Not only sleeping quarters but also washrooms, latrines, theaters, post exchanges, and all places for evening recreation should be screened.

e. So far as possible, especially in the tropics, huts and buildings should be so constructed that there is four-way ventilation. The screened buildings must not be so poorly ventilated that occupants are driven out into the open by excessive discomfort. It is wise to provide electric fans or punkas where possible in the tropics because they tend to make screening less irksome.

f. Proper routine maintenance of screening is essential, with prompt and effective repair of rents and tears, and discovery and blocking of new cracks and knotholes. In malarious areas the great importance of these apertures for mosquitoes is out of proportion to their seeming insignificance. The soldiers who occupy huts and barracks should be taught to make all minor repairs. Strict supervision of screening is essential. Under some conditions it may be desirable to assign an enlisted man as mosquito-proofing maintenance orderly whose duties it would be to inspect all screening at regular intervals, making such repairs as are within his capabilities and reporting others to proper authorities.

6. Spray-killing adult mosquitoes. a. General principles. One of the most important measures of malaria control is the spray-killing of adult mosquitoes with pyrethrum extracts. This measure, when used against malaria vectors which rest indoors in the daytime, will (1) immediately destroy a high percentage of infective mosquitoes of an area, (2) destroy many potential vectors before they can become infective. The use of pyrethrum sprays will

also have a repelling effect, deterring mosquitoes from entering sprayed dwellings or even circumscribed outdoor areas which have been sprayed. Finally, if applied often enough, spray-killing will reduce the density of a mosquito population in an area.

In malaria seasons, it is essential to spray all types of adult mosquito resting places. Whenever possible, such spraying should be extended to native villages within a radius of a mile. Shelters may include not only barracks, houses, huts ents, and tents, but also outbuildings, latrines, storehouses, stables, cowsheds, empty boxes and barrels, etc. If troops are operating in hostile areas, local vill ers may abandon their homes, leaving behind infective mosquitoes. It may be even more important to spray such villages than the actual quarters of the troops. If the malaria vectors tend to leave houses, tents, and barracks at sunrise the spraying should be done either before dawn or after sunset. When applied after sunset the spray will have both a killing and repelling effect.

In military installations in highly malarious areas daily spraying is advisable. Huts at road blocks, sentry huts, huts used by beach patrols, antitank gun emplacements, pill boxes, and similar places when occupied at night may be sprayed advantageously at dusk and again at midnight. It is not necessary, however, to spray native villages oftener than twice a week, since the aim here is to kill fed mosquitoes before they become infective, 9 to 12 days or more after feeding on a gametocyte carrier.

b. Pyrethrum insecticides. Pyrethrum flowers contain certain active principles which are grouped under the term pyrethrins, and which are extracted by kerosene or other solvents. These pyrethrins kill all species of mosquitoes and certain other insects by destructive action on the central nervous system. The sprays are nontoxic to man and animals (although liberal application of a kerosene-pyrethrum spray to the skin may cause local irritation and inflammation). Pyrethrins rapidly disintegrate by a photochemical catalytic reaction when exposed to sunlight and oxygen. Pyrethrum concentrate and sprays should be kept in tightly stoppered, light-proof containers. Containers should never be left open or in the sun. In sealed containers pyrethrum extracts will maintain their potency for a year or more even in the tropics. If a pyrethrum spray fails within three minutes to kill all the adult mosquitoes with which it comes into contact it no longer contains the standard amount of pyrethrins and is not suitable for use.

Three types of pyrethrum products are supplied by the Quartermaster. There is first a 20-1 concentrate, each gallon containing the oleoresins of approximately 20 pounds of flowers, with not less than 75 to 100 grams of total pyrethrins per gallon, or 2 to 2½ grams per 100 cc. This 20-1 concentrate in Army practice is diluted with 14 parts of a good quality of water-white, preferably odorless, kerosene and may be sprayed from various types of mechanical sprayers, such as are described below.

Secondly, in areas where there may be difficulty in obtaining kerosene for diluting the concentrate, a prepared ready-to-use pyrethrum spray is supplied. This conforms to Class AA rating, as defined in the Department of Commerce Standard Specifications. This rating is based on actual performance killing tests and these AA sprays will contain 150 to 180 mg. of pyrethrins or their equivalent per 100 cc. With either of the above two sprays, about one-half ounce is required to spray effectively 1,000 cubic feet.

Finally, pyrethrum is supplied in containers holding a mixture of 20-1 concentrate, oil of sesame; and liquid freon, as described below.

c. Freon-pyrethrum aerosol. Pyrethrum may be dispersed from pressure

cans or cylinders containing a mixture of 1 percent pyrethrins, 2 percent oil of sesame, and 97 percent freon. (Freon 12 is dichloro-difluoro-methane.) The oil of sesame is a synergist or activator, and enhances the killing power of the pyrethrins. The vapor pressure of the freon produces the necessary spraying pressure, which does not decrease as long as a drop of liquid is present in the closed container. As the freon containing the insecticide is sprayed it forms a fine mist from which the solvent evaporates almost immediately, leaving the pyrethrum and sesame suspended in the air as a cloud of fine droplets called an aerosol. The freon is nontoxic to man and mosquito and it is noninflammable. It is used simply as an expellent to disperse the pyrethrum and oil of sesame.

The pressure in freon cylinders varies with temperature. For example, it is 37 lbs. per sq. in. at 40° F., 84 lbs. at 80° F., 116 lbs. at 100° F., and 205 lbs. at 140° F. Various types of freon-pyrethrum pressure cans and cylinders are available. One pound of freon-pyrethrum mixture is sufficient to spray about 150,000 cubic feet of space when properly used. It is liberated in 12 to 14 minutes of continuous use. To spray a room, hutment, or native dwelling, the can is carried rapidly toward all corners of roof, ceiling, or floor while the spray is allowed to escape. No direct hits on mosquitoes should be attempted, as this wastes spray. About 4 seconds of spraying per 1,000 cubic feet is usually sufficient in military huts. Somewhat longer spraying for the same cubage is generally required for native huts. It is best to spray under the eaves of a hut before going inside. The freon-pyrethrum spray is so effective that it can be used sparingly and without wastage.

When a mixture of freon and the usual pyrethrum concentrate freezes, a wax is precipitated which may block the tube of the dispenser. The wax goes back into solution after a few days at 70° F. or higher so that this freezing effect is rarely troublesome in actual practice, especially since the dispenser is generally used in warm countries. Within a few months a wax-free concentrate will be available.

d. Hand atomizers or spray guns. Small household-type spray guns are useful for casual spraying of quarters. Where mosquitoes are a nuisance small spray gun atomizers should be issued at the rate of one per 20 men. They consume relatively greater amounts of insecticide than other types of sprayers but may be used to advantage by the troops themselves for occasional spraying.

e. Paint gun sprayer assemblies. Pyrethrum insecticides can be effectively sprayed through any ordinary paint gun if a source of air pressure of 15 pounds or more is supplied. The source of the pressure may be in tanks pumped up by hand or by gasoline or electric motor-driven compressors. Solidified carbon dioxide (dry ice) when available, in suitably constructed pressure tanks, is a good expedient.

7. Drainage. It is highly important that fixed installations have suitable antimosquito drainage, integrated with the usual system of drains designed to carry the normal surface water runoff. Drainage should be undertaken early, during the actual construction period. It is desirable to have it well in hand before the camp or station is occupied. It is also important to avoid blocking an existing draining system by new construction.

No drainage scheme should be undertaken without careful preliminary surveying and planning. Drainage to control mosquitoes may be accomplished by the use of surface ditches, subsurface drains, vertical drains, pumps, tide gates, and other devices. In every case the aim is to

drain an area in such a way that regardless of weather or tide there will be no mosquito breeding. Ditches and drains may be unlined, lined, or rock-filled. The lining may be precast sectional inverts, concrete or stone slabs, rip rap, or other material. For subsurface drains many materials have been utilized, as, for example, baked clay or concrete tile, rock, bamboo, and brush.

Drains should be as few as will accomplish the purpose. Drainage requires that careful levels be run and that well-thought-out plans be made as to the relation of a drainage system to existing water supplies, to other sanitary improvements, to disposal of sewage, and to maximum amount of water to be carried in the rainiest season. In some areas, where the vector breeds in seepage or in slowly running water, open ditches may cause a greater malaria nuisance than the swamp they drain.

Where a satisfactory outlet is not available, land may sometimes be graded so that surface water accumulates in one or more pools which can be periodically treated with larvicides.

Ditch maintenance is a very important item for which adequate provision must be made.

8. Filling. It is usually necessary to do a considerable amount of filling on the site of a new permanent installation. Frequently, there will be man-made depressions under buildings, beside roadways, and in other places where earth has been borrowed for various purposes. When large hydraulic fills are contemplated for construction purposes, it is necessary to make adequate plans to avoid blocking natural drainage and to control with larvicides the breeding places, such as pools and cracks, created by filling operations.

9. Larvicidal oiling. a. Discussion. Suitable oils, properly applied, will kill the aquatic stages of all species of mosquitoes and will also destroy sheltering vegetation at the edges of breeding places. The chief killing factor is a toxic action following contact with the tracheal cells of larvae and pupae. Consequently, the best larvicidal oils are those which penetrate most quickly, and with the greatest toxic effect, into the spiracles and thence into the tracheae of larvae and pupae. What is recuired is a cheap but toxic oil or mixture of oils of suitable toxicity and viscosity which, when sprayed on the surface of the water, spreads well in a uniform, persistent, and stable film. The best larvicidal oils will kill in less than 30 minutes under these conditions.

Kerosene or gasoline may be used as larvicides and will give a good kill but they form transitory films, are expensive, and may constitute a fire hazard. Occasionally it may be desirable to kill all larvae in a well by a film of gasoline, which soon evaporates, leaving no taste in the water. Leaded gasoline should not be used in wells the water of which is used for drinking.

Waste motor oils are not highly toxic to larvae, as they are relatively nonvolatile. But they are sometimes used effectively when applied as a fairly thick film. Better results are possible when waste motor oil is mixed with kerosene, generally in the proportion of 1 to 3, respectively, adding if possible about 2 percent of castor oil. However, the amount of kerosene to be added will have to be determined by experiment.

Diesel oil No. 2, as supplied by the Corps of Engineers, is preferable to a mixture of waste oil and kerosene.

The ideal specifications for a larvicidal oil are the following:

Specific gravity 20/4	0.83 - 0.86
Viscosity (Saybolt Universal at 100° F.)	31 - 43
Initial boiling point	297° - 414° F. (165° - 230° C.)
Final boiling point	Max. 800° F. (426.7° C.)
Spreading coefficient	Min. 17.0

b. Application of oil. General. Oil may be effectively applied to small collections of water by means of an oil-soaked broom, an oil mop, or oil-soaked waste tied to a stick. An ordinary waterpot may be used to pour oil on small collections of water.

c. Sprayers. The knapsack sprayer consists of oil container, hand pump, and spray nozzle, and is carried and operated by one man. The ordinary sprayer has a capacity of 4 to 5 gallons and a spraying range of about 25 feet. The knapsack sprayer is a practical and economical apparatus for applying oil to ditches, small ponds, or other collections of water which can be reached by the spray. Large power sprayers may be employed to oil extensive areas such as the borders of lakes, or, in some instances, swampy places. Such sprayers usually consist of a barrel or tank container and a motor activated pump mounted on a vehicle or boat. Airplanes may be equipped to oil extensive breeding areas.

d. Continuous oilers. Where oil will be dispersed by currents, as in streams or ditches, it may be better to attempt constant application of oil. There are at least three types of continuous oilers, none of which is entirely satisfactory. It must be pointed out that continuous oilers require a good deal of attention, generally use more oil than would be dispensed for the same area from a knapsack sprayer, and should not be used unless other methods are found impractical.

Drip oilers consist of a tin or drum of about 5 gallons capacity, placed on supports over a stream or ditch so that oil will drip on the water surface. Size of hole will govern amount of oil dropping from the container. In home-made containers a nail hole may be used, with a nail left loosely in the hole. It may be necessary to use some string to form a washer around the nail head. The can should be several feet higher than the stream surface so that oil will spread quickly when drops strike the water. The rate of flow required to furnish a satisfactory film depends on circumstances. Generally, an average flow of from 10 to 20 drops per minute will suffice for each foot of width of water in the stream.

Submerged oilers are containers having two small openings. They are designed so that when sunk to the bottom of a stream or pond their oil will escape through one opening and be replaced by water which enters through the other. These cans have the disadvantage that they are difficult to adjust so that oil will flow properly, as the openings are easily clogged.

Oil may be applied continuously by means of a weighted submerged bag of oil-soaked sawdust. Or oil-soaked sawdust may be scattered over the surface of a breeding place.

Oil booms may be used to combat larval drift, which is sometimes troublesome when there is intense breeding in a stream above the area being controlled. These booms may be constructed of locally obtained materials and placed across a water channel, supported by stakes. The booms are so built that, while holding back larvae, the flow of water is not obstructed. The larvae are killed by oil-soaked sawdust or chaff thrown on the water

surface above the boom.

e. Amounts of oil required. Using Diesel oil No. 2, about 9 gallons are required per acre of water surface for complete coverage with a uniform, stable oil film. With an ordinary knapsack sprayer of the Panama type one laborer can oil about five acres of breeding area per day, if the terrain is not difficult. In usual practice the amount of oil necessary to produce a uniform film may very from 10 to 20 gallons per acre. The amount of floatage and vegetation will make a considerable difference. It is usually necessary to spread oil once a week.

10. Spreading Paris green on mosquito breeding places. a. Nature of Paris green. Paris green (an aceto-arsenite of copper) is a micro-crystalline powder. It should be emerald green, with at least 50 percent arsenious oxide. Its solubility should not exceed 3 percent. Paris green should pass a 300 to 325-mesh sieve. The latter has a mesh opening measuring 0.043 mm. As mixed, ready for distribution in the field, Paris green should kill all 3d, 3d, and 4th stage larvae in a laboratory jar in two hours. It has a specific gravity greater than that of water, but certain types float longer than others. The longer it floats the better it is as an anopheline larvicide.

The usefulness of Paris green depends on the fact that it is a gut poison for larvae. Larvae feeding at the surface will ingest Paris green particles. This is especially true of Anopheles larvae, but when Paris green floats long enough in still water it will be ingested by Aedes and some Culex larvae, which feed some of the time at the surface. Sometimes when Paris green is mixed with wet sand and taken to the bottom it will be ingested by bottom feeding larvae. Paris green however, has its greatest usefulness against Anopheles larvae.

Paris green, after sinking, is usually volatilized by various moulds in the water. As ordinarily used in mosquito control procedure, it is harmless to man, animals, fishes, or bankside or floating vegetation. Paris green does not repel ovipositing mosquitoes and in this respect is inferior to oil.

b. Dust dilutions of Paris green. When dust mixtures are used it is advisable to prepare a diluent which will pass a 30-mesh screen, or finer. This diluent may be road dust, powdered charcoal, slaked lime, powdered soapstone, or some other dust. The diluent must be well mixed with Paris green, the required dilution varying from 1 to 5 percent by volume for hand operated blowers to 25 percent or more for dusting from airplanes. When lime is used Paris green may be added in the proportion of 10 percent by weight. This is equivalent to about 5 percent by volume.

However distributed, it is essential to test the efficacy of Paris green in the field from time to time. This may be done by ascertaining the kill in petri dishes containing larvae and placed at strategic points in the dusted area, or by dipping for larvae 10 to 24 hours after application of the Paris green and noting the survivals.

c. Types of dust distributors. Paris green mixtures can be applied to ponds, lakes, and larger streams by putting the dust into the air from the windward side so that it will form a cloud and be carried out over the water. The large hand or motor operated dust blowers ordinarily employed for dusting trees in horticultural work, may be used to throw the larvicidal dust into the air. These may be knapsack, rotary, or some other type. For large bodies of water a slowly settling dust cloud carried along by a light wind will give best results. In the case of small bodies of water where

vegetation is heavy or where ditches and streams are too narrow to be dusted by the cloud method, handfuls of dust mixture should be thrown directly on or into the vegetation or onto the surface of the water. There are also automatic distributors for small canals or streams. Airplanes may be used to apply the dust over large areas, such as extensive swamps. Generally, the best results will be obtained on a sunny day after the dew has evaporated from vegetation.

It should be remembered that, when special distributors are not available, Paris green mixed with wet or dry sand, gravel or small pebbles, and thrown by hand is often quite effective.

The amount of larvicide required to treat an area of given size will vary according to the amount of vegetation present. When the surface of the water is clear, about one-half ounce of Paris green, mixed with 99 parts of dust by volume, is sufficient for 1,000 square feet of water surface. Greater quantities of Paris Green must be used where there is vegetation, such as grass or reeds. The percentage of Paris green in such places should be from 2 to 5 percent by volume, as determined by experiment.

One man can usually prepare and spread Paris green mixture along about 1½ miles of bank in one day, depending, of course, on local conditions.

Since Paris green will kill 2d, 3d, and 4th stage larvae within a few hours it need be applied only at such intervals as are necessary to prevent the development of the remaining 1st stage larvae or of new broods of larvae. Under average conditions Paris green should be applied at intervals of from 5 to 7 days in warm weather. Dusting should be repeated without delay whenever examination of the water reveals the presence of 4th stage larvae.

d. Dustless application of Paris green. The need for preparing and transporting dust diluents is obviated by using a dustless method with the following stock suspension:

Kerosene oil	1 pint
Paris green	1/2 pint
Egg albumen (dry powdered)	1/4 teaspoonful

(If no powdered egg albumen is available an albumen solution can be prepared by using 4 to 6 egg whites in a pint of water. Use one-fourth of a pint of this solution to one pint of kerosene. The egg albumen is not absolutely essential but it tends to make the Paris green more evenly distributed in the final spray.) The ingredients are put into a bottle in the order named and thoroughly shaken. This stock suspension, again thoroughly shaken, may be put into vials, each holding 6 teaspoonfuls (about 27 cc.). These stoppered vials may be taken to the field by the spraying laborer in a specially made belt.

To prepare the final spray one vial, or 25 to 27 cc. of stock suspension, is mixed with 5 quarts of water. It reduces the labor of transportation if the mixing is done at the breeding place to be sprayed. The water should be strained through a sieve and the mixing may be done in the usual knapsack sprayer, which generally has about a 4-gallon capacity. By using only 5 quarts of final spray at one time in this sprayer it is possible by frequent agitation to keep the spray well mixed while it is being applied. About 500 square feet can be sprayed with 5 quarts of this spray.

About 2 teaspoonfuls of castor oil in 5 quarts of spray will add to the effectiveness of this dustless Paris green larvicide.

When it is not possible to prepare the above stock suspension, fairly good results may be had with a simple mixture of 5 teaspoonfuls (about 22.5 cc.) of Paris green in 5 quarts of water, using an ordinary

knapsack sprayer. Almost continuous agitation of the sprayer while spraying is advisable. Some 500 square feet of breeding area can be sprayed with 5 quarts of this larvicide.

11. Care of equipment. Equipment for spreading oil or Paris green larvicides requires careful maintenance. It should be overhauled and thoroughly cleaned at reasonable intervals. Full sets of replacement parts should be stocked.

12. Phenothiazine. It has been shown that phenothiazine is an effective substitute for Paris green. If available, in the absence of Paris green, it may be used. It is less stable than Paris green but more floatable.

13. Miscellaneous measures to deal with breeding places. In some areas effective larva control may be had by shading a stream or canal, using some rapidly growing plant which will give a dense cover.

In other areas, stream breeding anopheline vectors may be controlled by periodically sluicing the stream. A small dam is built to impound water which can be released by the hand or mechanical removal of a barrier, or by use of automatic siphons. Where irrigation water in rice fields or canals is at fault, effective mosquito control is sometimes possible by intermitting the supply of water so that the fields become just dry enough each week to remove the surface film of moisture without drying the roots of the plants. Fluctuation of water level in ponds and reservoirs is sometimes very effective in controlling mosquito breeding.

All wet cultivation, such as sugar cane or rice, within two miles of any fixed Army installation, should be eliminated, if feasible.

When larvicides such as oil and Paris green are not available, control of breeding is sometimes possible by tightly packing a ditch or small pool with fresh green-cut vegetation. Unless tightly packed and renewed as required the rotting vegetation may create conditions leading to increased culicine breeding.

In some areas routine attention must be paid to artificial breeding places such as wells, cisterns, roof gutters, and various types of household water containers, tin cans, and coconut shells. These may be screened, emptied, oiled, or destroyed, as indicated.

In wells and pools without much vegetation some help in larva control may be had by using larva-eating fishes, such as Gambusia affinis.

14. Treatment (curative). It is essential in the control of malaria that all cases of malaria be properly treated. The following outline gives the principal points to be noted in the treatment of malaria. (See S.G.O. Circular Letter No. 135, Oct. 21, 1942.)

a. Malaria - uncomplicated. (Patient able to retain oral medication).

(1) Combined QAP treatment. (Method of choice)

(a) Quinine sulphate, 0.64 gram (10 grains) three times daily after meals for two or three days, or until pyrexia is controlled. Then give

(b) Atabrine, 0.1 gram (1½ grains) three times daily after meals for five days. Then after two days without anti-malaria medication give

(c) Plasmochin, 0.01 gram (3/20 grain) three times daily after meals for five days, except for the debilitated

patient, who should receive only two doses daily.
(Discontinue if toxic symptoms occur. Never give atabrine and plasmochin concurrently.)

(2) Atabrine-plasmochin treatment. (May be used for simple vivax infections and in other infections when no quinine is available.)

(a) Atabrine, as above for seven days. Then after two days without antimalarial medication, give plasmochin, 0.01 gram three times daily for five days, as above.

(3) Quinine-plasmochin treatment. (Method when no atabrine is available.)

(a) Quinine sulphate, as above for seven days, during the last five of which accompany each dose of quinine with plasmochin, 0.01 gram three times daily.

NOTE: Quinine sulphate tablets are more quickly effective if dissolved before taken. Ten grains of quinine sulphate may be dissolved in one ounce of water which has been acidified by the addition of 10 minims of dilute sulphuric or hydrochloric acid, (U.S.P.) or 2 grams (30 grains) citric acid.

b. Malaria with coma. Quinine dihydrochloride, 0.64 gram (10 grains) in at least 200 cc. sterile normal saline given intravenously very slowly every eight hours until patient can retain oral medication; then treat as an uncomplicated case. (See 14 a (2) (a))

c. Malaria with vomiting. (Unable to retain oral medication)

(1) Quinine dihydrochloride, 1.0 gram (15 grains in 10 cc. sterile normal saline injected carefully into the gluteal muscles of one buttock; site of injection then massaged thoroughly for two minutes. Care must be taken to avoid the sciatic nerve. Dose may be repeated if necessary in eight hours in other buttock. As soon as patient can retain oral medication treat as an uncomplicated case. (See 14 a (2) (a))

(2) Atabrine dihydrochloride, 0.2 gram (3 grains) in 5 cc. sterile normal saline may be substituted for intramuscular injection if no quinine dihydrochloride is available.

15. Malaria control in the field. "Fighting" malaria control, or the prophylaxis of malaria among troops in combat or maneuver areas in the field, is one of the most difficult of all malaria control problems. It requires constant attention to the application of individual protective measures against mosquitoes and to the use of suppressive antimalarial drugs. There must be the greatest accent on personal prophylaxis. The soldier must himself apply measures which will protect him from malaria. Under combat conditions the need for freedom from malaria is greatest, yet under these conditions so is the risk of infection. Therefore, it is highly important to apply effectively such measures as suppressive treatment and the use of sleeping nets, repellents, sprays, and protective clothing.

16. Use of sleeping nets. Nets to protect sleeping individuals are useful in preventing malaria but they must be properly employed and properly maintained. They must be so adjusted and used that mosquitoes cannot feed through the mesh because the net touches the individual. The lower edge must be so tucked in that no opening is available for mosquitoes to enter. Overhead frames should be provided for bed and cot nets. These should not have sharp points which will catch and tear the netting. Nets used in small tents should be suspended from and conform to the shape of the interior of

the tent. Shelter tent nets should not be used over the outside of the tents but hung inside. Nets should be folded up by day. When the net is entered at night the interior should be inspected for stray mosquitoes.

It is highly important that nets be available for use from the first night spent in malarious areas. There are places in the tropics where a single night of exposure to mosquito bites may result in a 20 percent or greater infection rate among the exposed troops. Nets should therefore be carried as items of personal equipment by all personnel proceeding to malarious zones. Even in the forward areas it is highly important to utilize this protective measure whenever feasible.

The best material for nets is a stiff bobbinet. Such materials as cheesecloth, tobacco cloth and butter cloth, are not suitable because they almost completely prevent proper ventilation. The size of the holes should not exceed 0.0500 inch in any dimension to exclude all species of mosquitoes. To exclude sandflies the largest permissible diameter is 0.0334 inch. The top as well as sides should be of netting to allow for a better circulation of air. Strong reinforcing at corners is necessary and repairs should be prompt and complete. Adhesive tape, sewing, or patching may be used to repair rents in the netting. Frequent inspection is required.

17. Use of chemical repellents. Various essential oils and synthetic products have been used, as creams or lotions applied to the skin, to repel mosquitoes. Most mosquito repellents have had one or both of two major defects: (1) very transitory or weak effect, and (2) risk of toxic poisoning by absorption through the skin, especially when the repellent must be used liberally during extended periods of time. For example, diethyleneglycol is a mosquito repellent but is reported to be toxic when absorbed through the skin and apt to damage kidney and liver tissue if used freely for a considerable time.

There are three good repellents (612, indalone, and dimethylphthalate) which are being issued by the Quartermaster. Of these, 612 will give good protection against mosquitoes for about four hours after liberal application, even under sweating conditions. Indalone will do about as well, except under sweating conditions when it should be renewed half-hourly. Dimethylphthalate is slightly less effective than 612, but more effective than indalone. All are better than any repellents available heretofore.

Certainly, very much greater use than ever before should be made of these repellents when troops are in forward areas. All exposed skin surface should be covered with the repellent. It is also important to apply the repellent to the clothes where they are so thin or so taut that mosquitoes can feed through the cloth as, for example, over the shoulders and seat. Repellents should not be applied to the lips, nor allowed to reach the eyes.

18. Use of protective clothing. Men on guard duty or forced to remain out after dusk where malaria-carrying mosquitoes are common, may wear approved head nets and gloves as supplementary protective measures. Head nets have certain disadvantages. They impair vision and add to discomfort in the tropics. Vision is least impaired by black nets. Shirt sleeves should be kept down after sunset. Slacks, not shorts, should be worn. By keeping the trouser legs encased in leggings, or tucked into high boots, mosquitoes are kept from biting the ankles. Mosquito boots of canvas, suede, or goatskin may be useful if long enough to protect the leg nearly to the knee. Such light boots are not suitable for marching, which requires service shoes with leggings.

The efficiency of protective clothing varies directly with the amount of inspection and discipline which can be applied.

19. Pyrethrum sprays. It seems likely that pyrethrum sprays, especially the freon-pyrethrum aerosol, will be found increasingly useful in the control of malaria in the field away from fixed installations. The repellent effect of pyrethrum is so marked that, although adequate tests have not been reported, it nevertheless seems advisable to suggest that in highly malarious areas much greater use be made of pyrethrum sprays in temporary encampments and even in front line positions. Shelter tents and jungle shelters should be sprayed at dusk, and any native huts or outbuildings in the vicinity should also be sprayed, when feasible. There is evidence that the spraying of the outer garments will help materially to repel mosquitoes.

20. Instruction of personnel. The instruction of all ranks in regard to malaria and malaria control is important, and it should begin in the continental training bases, even if these are not malarious. The nature of malaria, cycle of development of plasmodium, role of Anopheles mosquitoes, and the fact that the disease can be prevented only by special measures, should be explained briefly in simple terms. Full use should be made of moving pictures and of locally prepared talks, bulletins, and directives. An important point to be stressed is that malaria cannot be prevented by routine camp sanitation or personal hygiene. Specific control measures are essential. In permanent and semipermanent posts and camps a high degree of protection against malaria is afforded by employing measures outlined above. In forward or combat zones and while maneuvering or holding defense positions in the field away from fixed installations, especially in tropical countries, the most feasible malaria control measures are those for which the individual soldier himself must be responsible to a very large extent.

21. Drug prophylaxis, or suppressive treatment. a. General. Drug prophylaxis or chemoprophylaxis against malaria was attempted long before the etiology of the disease was known. It is now clear that (1) true or so-called causal prophylaxis, i.e., the actual prevention of infection, is not certain by the use of any known drug; (2) sporozoites do not appear to be destroyed in the body by drugs; (3) malaria probably can not be eradicated from a community by the use of drugs.

What is achieved by the so-called prophylactic drugs is clinical prophylaxis, or better, suppressive treatment. The three drugs commonly considered in a discussion of malaria prophylaxis are plasmochin, atabrine, and quinine.

b. Plasmochin. Little need be said about plasmochin, for there does not appear to be any justification in attempting individual or mass malaria prophylaxis by using plasmochin, either alone or supplemented by atabrine or quinine. Plasmochin, however, is a polyvalent gametocide, especially effective against the crescents of Plasmodium falciparum. Doses of 0.02 gram (three-tenths of a grain), taken on each of two or three days, after meals, will generally clear the blood stream of all gametocytes. This has some prophylactic value in preventing the infection of mosquitoes but not enough ordinarily to justify its use for malaria prophylaxis.

c. Atabrine. Atabrine, in doses of 0.4 gram per week, will give as good or perhaps a little more effective suppressive treatment than quinine in daily 5 to 7½-grain doses. The atabrine should be taken, 0.1 gram, twice

a day on two nonsuccessive days a week, with water and immediately after meals. It is better to space these suppressive treatments two or three days apart. Atabrine usually causes no discomfort. Occasionally there have been reports of transitory gastro-intestinal irritation after prophylactic doses. A temporary yellowing of the skin may occur, since atabrine is a dye. But this tinting of the skin will clear up after stopping atabrine.

It must be pointed out that it is not clear from published reports that 0.4 gram of atabrine a week is sufficient in highly malarious areas. Possibly the dose in such areas should be 0.6 gram a week. It is also not clear how many months of constant atabrine prophylaxis can safely be tolerated. The limit appears to be well over six months. As many and as long intervals of freedom from atabrine as feasible should be allowed.

d. Quinine. The most important drug in malaria prophylaxis has always been quinine, and the first line of defense for troops in actual combat has been quinine prophylaxis, designed not to prevent infection - which no drug will do with any certainty - but to prevent the men at the front from being incapacitated by acute malaria. Quinine prophylaxis is suppressive treatment, and it will frequently (but not always) prevent clinical symptoms while being taken. Another point to bear in mind is that when clinical malaria occurs after quinine or atabrine prophylaxis it is generally less severe than otherwise. The usual dose of prophylactic quinine is 5 to 10 grains daily after the evening meal. Some authorities prefer 10 grains twice a day on two or three days a week. Under present conditions quinine prophylaxis is to be used only if a man cannot tolerate atabrine.

e. Discussion of chemoprophylaxis. As already stated, there is no drug which in safe doses will prevent mosquito-borne infection with malaria. But quinine and atabrine, in small doses, are almost equally useful in suppressing the appearance of clinical symptoms after infection. Such suppressive treatment has great emergency value in that it will enable malaria infected troops to maneuver and fight actively in spite of the infection, which otherwise would incapacitate them. The usual clinical rigors and pyroxia are suppressed and do not appear until prophylactic medication has been stopped. In dealing with large numbers of men, the terminal point of prophylactic drug administration should be staggered to avoid overcrowding the hospital with relapsing cases, which may occur to the extent of 50 percent or more, whether quinine or atabrine has been taken. Except for this possible need to stagger the terminal point, there is no logical reason to continue the prophylactic drug after a man has returned to a protected area. He should then be observed for indications of malaria and given a therapeutic treatment if required. During this period of observation repeated thick blood smears should be examined, if possible.

The question often arises as to when suppressive treatment should be started. The answer must be largely empirical because so little is known about the stages which precede the erythrocytic forms of the plasmodia. There is no evidence that suppressive drugs, in safe doses, are effective against the pre-erythrocytic stages. It is probably safe to delay the suppressive treatment for three or four days after entering an area where such treatment is indicated.

22. Miscellaneous. a. Nocturnal visits to unprotected places. In some areas a high percentage of all malaria infections is acquired while soldiers are visiting unprotected towns or villages after dark. In such areas it is advisable to consider a change in the usual leave hours whereby

passes are issued which will require the soldier to return to his protected camp by nightfall.

b. Malaria discipline. Malaria discipline is defined as a state of orderly and effective conduct or action on the part of soldiers in respect to malaria control. It implies ability and readiness to practice malaria control, as outlined above, particularly the individual measures. When there is malaria discipline in a company, screens and bed nets are in good repair and are properly used, protective clothing and repellents are employed to the fullest practical extent, suppressive treatment is faithfully taken as ordered, and men do not expose themselves heedlessly to mosquito bites. Good malaria discipline reduces to a minimum such dangerous practices as loitering, fishing, or swimming after dusk in malarious places.

Malaria discipline is developed by careful indoctrination of officers and enlisted men, and it presupposes constant supervision by those in command.

Malaria control is never automatic. In highly infested areas it requires of the Medical and Sanitary Corps officers concerned unremitting attention to small details. Success is possible only when there is a high degree of cooperation among all ranks and all branches in outwitting the Anopheles mosquito."

For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

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R E S T R I C T E D
(Equals British CONFIDENTIAL)

HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

26 June 1943

CIRCULAR LETTER NO. 22

SUBJECT: Rendition of Monthly Report of Dental Service.

1. M.D. Form 57, (revised May 14, 1942), will be used in submitting Report of Dental Service. Do not use old M.D. Form 57 which was in use in England.

2. Many errors in rendering M.D. Form 57, Report of Dental Service, are being made repeatedly by dental officers on duty in this theater. Observance of the following instructions will eliminate the errors which are most commonly made.

a. Section 1. Many units are using additional headings, such as, Medical Detachment, ---th Engineer Regiment. Use only, ---th Engineer Regiment. Due to security measures, the location and strength need not be given. Give APO number in lieu of location.

b. Section 2. If the report is being rendered for the entire month give name of month only, not May 1 - 31. Give beginning and end of period only when less than a calendar month.

c. Section 3. Record all admissions, routine and emergency, and total number of sittings given to these admissions. There should be at least one sitting recorded for each admission. One admission is recorded for each new case treated. Should a new case present itself and be treated ten different times, it is recorded as one admission; the ten treatments are recorded as ten sittings.

d. Section 4. Self explanatory.

e. Section 5A. Self explanatory.

(1) Section 5B. List total number in each grade and not the names of the individuals.

(2) Summary. Total days of duty are the number of days a dental officer is assigned to his unit minus days sick, or on leave.

f. Sections 6 and 7. Use only standard terms of diagnoses as given in AP 40-1010. While a diagnosis should be entered for each operation, not all entries in the operations section need corresponding diagnoses in the cases diagnosed section. In other words, a case

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may be diagnosed as osteitis, it will appear as one osteitis case in cases dismissed section but it may be treated ten times and will appear as ten post operative treatments in operations section. When a tooth is extracted the diagnosis entered should indicate the extraction was the proper treatment and that no difinitive dentistry could have restored the tooth. Caries, therefore, is not a proper diagnosis for extraction; abscess periapical, tooth impacted, or some other applicable diagnosis should be entered. The diagnoses mandible edentulous and maxilla edentulous should be entered on the same report with the appliance, therefore, balancing total diagnoses mandible and maxilla edentulous with dentures, full. The diagnosis missing teeth should be used for reporting bridges and partial dentures and the corresponding number of missing teeth should appear on the same report as the appliance. In other words, the diagnosis is not entered when the case is started but only upon the completion and insertion of the appliance. If the appliances were constructed by the unit submitting the report, the number of teeth missing as recorded on M.D. Form 57 should correspond with the number of teeth replaced as recorded on M.D. Form 158. If the appliances were constructed by another organization, M.D. Form 158 need not show these cases but a notation stating that they were constructed by another organization should appear under General Remarks, M.D. Form 57. The diagnos caries, and filling, defective, should not be entered until the restoration is made. Therefore, the total diagnoses, caries, and filling, defective, should balance with total restorations. Oxyphosphate fillings should be held to a minimum, and when used, they should not appear as oxyphosphate in restorative section, but should be recorded as tooth, treatment of. Cases diagnosed as calculus should balance with calculus, removal of. Cases diagnosed as fracture of mandible and fracture of maxilla should balance with fracture, reduction of.

c. Section 8. Enter any conditions which may affect the professional dental service rendered, such as, shortage of equipment, supplies or personnel; lack of military personnel for treatment; or other adverse conditions.

3. When dental treatment is rendered to personnel other than U.S. Military, Sections 3, 6 and 7 will be divided into the following:

a. Military.

(1) U.S. Military (US).

(2) United Nations Military (UN).

b. Others.

(1) Civilian (CIV).

(2) Prisoners of War (PW).

5. Many monthly reports received in this office show a definite neglect on the part of the dental officer to render the necessary and urgent dental treatment to his command. Due to the large amount of dental work necessary, all dental officers should spend most of their time at the chair. It should not be necessary, and is not considered good professional procedure, to set a minimum number of restorations and treatments to be done in a day, but it is expected, that all dental officers will put in a good days work. Although we are on duty twenty-four hours a day, eight hours at the chair is considered a good day. The small amount of work done by some dental officers makes dentistry very expensive and is not fulfillingour obligation to the men who are so badly in need of dental treatment. The necessary steps will be taken by the individuals concerned to correct this condition.

6. Dental officers who do not have a copy of the Instruction and Reference Pamphlet for Dental Officers, or sample copy of M.D. Form 18b, compiled by this office, should notify this office and they will be forwarded a copy of same. The new pamphlet contains a sample copy of M.D. Form 18b.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

29 June 43.

CIRCULAR LETTER NO. 21

SUBJECT: Medical Department Dietitians and Medical Department Physical Therapy Aides.

Circular Letter No. 21, WD SGO, May 28, 1943, subject as above, is herewith reproduced for compliance by all concerned, within the limits of this Theater of Operations:

"1. General. a. Dietitians appointed in the Medical Department of the Army will be known as Medical Department dietitians. Physical therapy aides so appointed will be known as Medical Department physical therapy aides. They will have the relative rank of officers in the Army of the United States and will have the same rights, privileges, benefits, and gratuities as members of the Army Nurse Corps.

b. Grade. Initial appointments will be in the grade of Medical Department dietitian or Medical Department physical therapy aide with the relative rank of second lieutenant. Promotions will be made in accordance with Army Regulations and will be dependent upon experience, adaptability, existing vacancies, and recommendations of the commanding officer.

2. Duties. a. Medical Department dietitians. The Medical Department dietitian, through the director of dietetics or mess officer, is responsible to the commanding officer of the hospital for the entire food service to all patients in the hospital. She plans the daily menus with special reference to proper diet and nutritional requirements so as to utilize the food products available; devises standardized recipes and directs the preparation of food with special emphasis on food constituents, palatability, and attractiveness; calculates and directs the preparation and service of special diets, including metabolic diets, prescribed by the medical officers; instructs patients in correct food and dietary habits; assists in the ordering of food supplies and kitchen equipment according to quality and quantity needed; keeps accounts and records necessary for an intelligent working of the dietetic department.

b. Senior dietitian. The senior dietitian will be charged with the instruction, assignment, discipline, performance of duties, and the conduct of all dietitians on duty at the hospital. She will act as the liaison between the dietitians and heads of other departments. In hospitals where there is a training program, she will, in addition to the duties listed, be responsible for the training and welfare of the student and apprentice dietitians assigned to the hospital and will render the required reports on their work.

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c. Medical Department physical therapy aides. Medical Department physical therapy aides will administer and supervise physical therapy treatment consisting of massage, therapeutic exercise, electrotherapy, hydrotherapy, and thermotherapy as prescribed by the director of physical therapy.

d. Senior physical therapy aide. The senior physical therapy aide is responsible to the medical officer assigned in charge of the physical therapy clinic for treatment of patients and the conduct of the Physical Therapy Department. In addition, she is responsible to the medical officer for the instruction, assignment, discipline, and performance of duties of all physical therapy aides and student and apprentice physical therapy aides assigned to the hospital. She will act as a liaison officer between physical therapy aides and other departments.

3. Hours of duty. a. Medical Department dietitians. Normally the dietitians will work an eight-hour day and have one day a week off, unless otherwise prescribed by the commanding officer. These hours should be arranged so that all three meals will be covered and need not necessarily conform to the hours of the Army Nurse Corps or the Medical Department physical therapy aides.

b. Medical Department physical therapy aides. Normally the hours of duty for Medical Department physical therapy aides will be eight hours per day exclusive of meals, with one day off, unless otherwise prescribed by the commanding officer.

4. Records. The senior dietitian and senior physical therapy aide will keep 201 files, leave slips, and such other records as are essential in her files, unless the commanding officer deems otherwise.

5. Uniforms. a. General. Medical Department dietitians and Medical Department physical therapy aides will wear the street and hospital uniform and insignia described in AR 600-35 and AR 600-40. These officers should take pride in the uniforms and be well-groomed at all times. The hair shall be neat and worn well above the collar. Insignia or pins of civilian organizations and schools will not be worn on the uniform. Ornate jewelry will not be worn at any time. Makeup and nail polish will be inconspicuous.

b. Medical Department dietitians. White hospital uniforms now on hand may be worn until such time as replacement is needed; otherwise the change into the prescribed uniform will be made no later than July 1, 1943. A $\frac{1}{4}$-inch royal blue band will be worn by the dietitian, a $\frac{1}{2}$-inch band by the head dietitian, and two $\frac{1}{4}$-inch bands by the chief dietitian. These bands will be placed $\frac{1}{2}$-inch from the top of the outer fold of the cap.

c. Medical Department physical therapy aides. Hospital uniforms now on hand may be worn until such time as replacement is needed, otherwise the change into the prescribed uniform will be made no later than July 1, 1943. Insignia will be worn as prescribed in AR 600-40. As long as the blue hospital uniform is worn, the insignia will consist of the rank insignia on the right side of the collar, the physical therapy insignia on the left, both centered at the level of the clavicle, or about eight inches from the point of the collar. When the white hospital uniform is worn, a head physical therapy aide (1st Lt.)

will wear a band of navy grosgrain or velvet ribbon ½-inch wide, and the chief physical therapy aide (captain) will wear two bands of navy blue grosgrain or velvet ribbon ¼-inch wide on the front part of the cap, ½-inch from the top of the outer fold.

6. Conduct. These officers should conduct themselves in a dignified manner at all times. In view of the fact that many of those appointed have had no previous military experience, it is important that instruction with respect to the customs of the service be offered immediately after reporting to first duty station.

7. Quarters. Medical Department dietitians and Medical Department physical therapy aides will occupy quarters on the post when available and will be governed by Army Regulations and local regulations of the station and the hospital. If quartered on the post they will participate in the messing facilities for officers or members of the Army Nurse Corps.

8. Rank. Medical Department dietitians and Medical Department physical therapy aides are women members of the Medical Department, on an officer status in the Army of the United States, but are not a part of the Army Nurse Corps. They take precedence according to the relative rank of the individual.

9. Regulations. See AR 40-25, in process of publication."

For the SURGEON:

E. STADLEE,
Colonel, M.C.,
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

22 June 1943

CIRCULAR LETTER NO. 20

SUBJECT: Tunisian Campaign -- Comments by Hospitals of the Zone of Communications on the Treatment of Battle Casualties in Forward Areas.

NOTE: At the end of the final phase of the Battle of Tunisia, several hospitals of the Zone of Communications were asked to submit comments on the surgical treatment of battle casualties received during the campaign. Although quotation marks have been eliminated, the following paragraphs are direct transcriptions of these comments and suggestions. Specific case histories have been assembled in the Appendix with designations as footnotes. Many of the principles emphasized in these comments have been incorporated in Circular Letters, and they should be carefully observed by all Surgeons in the Theater.

Figures in parentheses refer to case histories in the Appendix. Comments in parentheses were not received from the hospitals.

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1. General Considerations.

a. In general, the great majority (90%) of patients received from the combat zone have been well and adequately treated, and good judgement has been exercised in selection of cases suitable for evacuation to this general hospital.

b. In several instances the severity of the injury has not seemed to warrant evacuation to this point, where, with a large proportion of the cases prospectively to be evacuated to the Zone of the Interior, it is inevitable that the patients should acquire an exaggerated idea of the severity of their injury, and a reluctance toward return to duty. (1)

c. There are rare instances of patients who were so critically ill on admission that their evacuation has appeared unwise and unduly hazardous.

d. Many patients might have been returned to full or limited service if they had not been told that they were to be sent to the Zone of the Interior, or that they would not regain full function of an injured part.

e. Almost all of our patients have spoken with appreciation of the skilled and kindly treatment they have received in the most forward areas -- litter bearers, battalion surgeons, and on back. Most of the patients have had excellent treatment and in particular the work of the Surgical Teams has been outstanding.

f. A number of our patients have received wounds due to shell fragments. The vast majority of these wounds have been satisfactorily treated by excision and left open. Most of them have healed kindly and have required only secondary closure or skin grafting for complete healing.

g. Judging from the comparatively small number of war casualties treated in this hospital it seems evident that delayed primary suture of wounds, particularly in patients who are to be evacuated is an ill-advised procedure. (This does not apply to secondary suture in a base hospital where the patient can be held until healing is complete.) The suture of wounds using a gauze pack as a drain should be avoided. The pack dries and acts as a plug rather than a drain.

2. Initial Treatment of Wounds.

a. Adequate debridement of wounds in combination with a filling of vaseline gauze and the use of sulfa drugs and plaster immobilization has produced clean wounds in most instances. The patients have arrived in good condition, relatively comfortable, and have only rarely shown even slight temperature elevation.

b. The extent of some wounds suggests that skin removal has been too extensive in many cases.

c. Large numbers of foreign bodies are still present in the wounds in many cases. The metallic foreign bodies only occasionally are responsible for persistent draining sinuses. In one case fragments of cloth were found just beneath the skin, where even casual debridement might have discovered them.

d. Conservation of digits. Numerous fingers with compound injuries and lacerated tendons have been treated conservatively, often with tendon suture and splinting. An over heroic attempt has been made in the presence of sepsis to preserve digits devoid of function. The protracted splinting in these cases results in diffuse stiffness of the hand unrelieved by late amputation of the useless digits, and necessitating evacuation to the Zone of the Interior. From the standpoint of military usefulness the results of early amputation in badly damaged fingers have been more satisfactory.

e. There have been several instances of attempted primary tendon repair in severe crushing or gunshot wounds of the hand. None of these has been successful.

f. Packing. The commonest criticism of the packing of wounds is that excessive amounts of gauze have been used, frequently acting as a plug, and often introduced through a small wound of entrance. In several cases through and through gauze strips have been used to pack perforating wounds of the extremities. Coarse meshed dry gauze has been used for packing in many cases, the removal of which is difficult and unnecessarily traumatizing. When it is necessary to use dry gauze packs to control bleeding, early removal is urgent and a notation that such packing has been employed would ensure an early change of cast.

g. On many occasions when the casts were removed and the wounds dressed, tight vaseline packs were found in place and when these were removed there was a gush of dammed back discharge. It seems desirable that the vaseline gauze strips be laid free the bottom of the debrided wound but over the skin in an axis at right angles to the wound. Having lain such strips all about the circumference of the wound the remaining central cavity can be filled with vaseline gauze folded back and forth. It is worth repeating that the debridement should be complete, the sulfanilamide sprinkled into all crevices of the wound and the vaseline packing inserted loosely.

(It is recommended that the term "pack" be dropped from common usage and reserved specifically for a temporary procedure used to control hemorrhage.)

h. Immobilization. Many casts are excessively thick and heavy. Insufficient padding, or padding carelessly applied, has resulted in pressure sores in several cases. The use of circular bandages inside casts, or of slings, may result in constriction or pressure sores. Simple linear incision of a circular cast is not sufficient safeguard against swelling and circulatory embarrassment. In one instance of simple uncomplicated fracture of both bones of the leg, amputation was barely averted because of circulatory dam-

age which could have been avoided by proper padding or bivalving of the cast.

i. We particularly condemn the use of the skin tight plaster on the acute injury, even those split up the front. We have had about 20 cases of fracture of the leg and a few of the arm come to us in plasters applied directly to the skin at the time of debridement in forward hospitals. With very few exceptions the skin has been blistered when these casts were removed. Sheet cotton, stockinette, cloth of any kind or even newspaper should be used to protect the skin.

j. Insufficient splinting and immobilization has been applied. (2) (3). Contractures have developed which have been very troublesome and in some cases have necessitated evacuation to the Zone of the Interior for this reason alone. Cock-up splints for radial nerve injuries are generally too short. Patients with peroneal palsy are not protected against foot drop.

k. Hip spicas in the majority of cases are carried unduly high and cause a considerable amount of unnecessary discomfort. In shoulder spicas a common error is to place the arm in too great abduction, and in or behind the frontal plane of the body rather than forward of it. Patients transported in "hanging casts" for fracture of the humerus do not travel well. (4)

l. Of the 272 patients treated, 111 were compound fractures, all but four of whom entered this hospital by air ambulance in excellent condition. The great majority of these patients had been treated by early debridement, local application of a sulfonamide packing with vaseline gauze and application of a padded plaster cast.

m. Fractures have been well immobilized and the plaster work has been excellent. In only a few instances has it been necessary to remove plaster because of constriction.

n. In badly comminuted fractures where good position has been obtained at operation loss of position is to be feared with change of cast. These cases are problems. While we favor the 10th to 12th day change of plaster we have allowed them to go several weeks pending soft tissue fixation of the fragments. It would be helpful if plasters in such cases could be bivalved rather than split down the center, so the dressing might be done and a new cast applied over the remaining half.

(Bivalving plasters prior to transportation means strengthening the halves by slabs and secure approximation before evacuation.)

o. Penetrating or perforating injuries of the knee have frequently been opened surgically in forward hospitals, foreign bodies or bone and cartilage chips removed, the joint irrigated thoroughly, sulfanilamide inserted into the joint, the synovial membrane closed and the wound then packed open. All so treated have done well with a minimum of synovial reaction. After the operative procedure all cases should be immobilized in a long

leg plaster to the groin and the use of a cross stick at the ankle to prevent rotation.

3. Amputations.

a. The small number of amputations seen would have benefitted had they been transported in Thomas splints with skin traction applied to the skin flaps. The open wounds were clean but the skin had retracted to the point that reamputation will probably be necessary to accomplish a serviceable stump.

b. In two instances a final amputation was done at too high a level to permit use of an artificial limb. Several cases of amputation have arrived with severe flexion contracture of the knee for lack of a posterior splint. Several cases of severe hip flexion contracture have been received as a result of omitting posterior splints following thigh amputations.

c. Out of twelve cases of anaerobic gas bacillus infection in one hospital, 2 were in sutured amputation stumps

d. In the following case, (5), a conservation type of amputation was performed through a level far below the site of vascular occlusion in an infected leg. I think the lesson here is that the line of demarcation in infected extremities with vascular occlusion does not mark the level at which an amputation stump will be sustained. Circulation just enough to maintain viability of tissues will not withstand an amputation or cope with an infection. Amputation in such cases must be high, if possible above the level of vascular occlusion.

4. Skeletal Traction in Hand Injuries.

1. In at least 10 cases skeletal traction for fractured phalanges or metacarpals has been allowed to pull through the finger joints for longer than 3 weeks before arrival of the patients here. This has resulted in stiffness of the fingers which will probably be permanent.

5. Eye Injuries.

1. 17 soldiers have entered this hospital with an enucleation of one eye. In each case a simple enucleation had been performed, resulting in unnecessary disfigurement due to sinking in of the lids on the orbital contents. It is urged that glass, gold, silver, (or steel) spheres be implanted in the extraocular cone under Terron's capsule at the time of enucleation.

6. Ear Irrigations.

a. At this hospital six patients with traumatic laceration of the eardrum and a subsequent suppurating otitis media have stated that drainage from the ear did not begin until the ear canal was irrigated. It should be borne in mind that when perforation of the eardrum is suspected, foreign matter, blood clots, or cerumen should be removed instrumentally and

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never in a manner which may force infection through into the middle ear. Otitis media following such injuries leads to increased damage to hearing and may be complicated by mastoiditis or chronic otitis, or, if there is laceration of the dura, meningitis is likely.

7. Cranio-cerebral Injuries.

a. Open wounds of the brain should have definitive surgery at the earliest possible date. If this cannot be done in a forward installation, a large firm dressing should be applied and the patient evacuated to a place where definitive care may be given. Even up to 96 hours may elapse before care providing the original dressing is not disturbed. In five instances patients were received here with the wound packed widely open with vaseline gauze and no further surgery done. They all had cerebral hernias and two had thrombosis of the superior longtitudinal sinus with resultant permanent paraplegia.

b. A number of cases of simple scalp wounds have been admitted in which no surgical care had been given except to pack open with sulfa powder without shaving or washing of the scalp. When they arrive here, the wounds are found filled with pus and debris and a crust composed of blood and sulfanilamide powder, holding the wound edges apart mechanically. These wounds are very difficult to close secondarily.

8. Chest and Lungs.

a. During the past several weeks we have received patients with thoracic wounds whose chests have been explored and foreign bodies removed from the lung, and who arrive here with hemopneumothorax and collapse of the affected lung. It is not necessary to point out the great advantage of maintaining an expanded lung under the circumstances. (6)(7)(8).

b. Several cases were transferred to us that had been held in forward hospitals for 4-10 days. These had untreated large hemopneumothoraces. Although X-ray was available it had not always been used. In one instance, a case with a large foreign body in the chest and a fulminating type of infection in the hemothorax, abdominal exploration had been performed without mention of any examination of the chest although the wound of entrance was obvious. (5).

c. These cases have been well treated and have come to us in good condition.

9. Abdominal Wounds.

a. We have received patients 2-7 days post-operatively after extensive abdominal surgery with simple layer closure. We believe that either through and through or some type of deep retention sutures should be used to ensure greater safety of transport. We have received one or two cases of wounds of the colon which had been closed without drainage. Both of these patients had complications that might have been avoided. In all

wounds of the colon and intraperitoneal rectum the damaged portion should be exteriorized or repaired and a proximal colostomy performed as has already been recommended.

b. Immediate colostomy for patients with retroperitoneal damage of the rectum. A few patients have come down to us with injuries involving the rectum retroperitoneally in whom a colostomy has either not been done or has been done late, with resultant marked extension of the infectious process throughout the retroperitoneal tissues of the pelvis. We recognize the fact that it is sometimes difficult to detect this damage; however, when such an injury is suspected, it should be ruled out before decision is made not to do a colostomy. An immediate colostomy, preferably a double barrel sigmoid colostomy, would save these patients a lot of time and reduce the amount of pelvic contamination materially. (10)(11)

10. Spine and Back Injuries.

a. Occasionally patients with injuries to the spine and pelvis and unable to void have been received at this hospital without catheterization for 24 hours. Such patients should have an indwelling catheter inserted or a suprapubic cystotomy performed before transfer. (It is recommended that the spinal injury be carefully appraised by X-ray examination and possibly neurosurgical exploration before a suprapubic cystostomy is performed.)

11. Records.

a. Many Field Medical Records and Emergency Medical Tags lack essential data on prior treatment, situation where tagged, and LOD status. On a few the entries are prolix and vague.

b. Commendation for careful notes on patients in forward areas. Records of patients from busy evacuation hospitals must of necessity be cut to a minimum and still be sufficient to tell the story. (12)(13)

c. Frequently the hour of arrival of patients in forward stations is not stated on the Emergency Medical Tags and Field Medical Records. This is of the utmost importance in following cases back through the chain of evacuation.

d. We can only comment favorably upon the work done in the forward hospitals from which we have received most of our patients.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

Incl: Appendix

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Appendix of Cases to
"Treatment of Battle Casualties"

Case 1.

A patient with a cortical fracture of a metatarsal bone, evacuated through 2 hospitals before admission one week after injury. This patient will be capable of performing full duty within 30 days of his injury.

Case 2.

One patient had had several grave hemorrhages from an upper thigh wound. He was transported here with the wound tightly packed, but unsplinted. A severe hemorrhage took place on the train, and another occurred on the night of admission. Prompt intervention was necessary for ligation of an arterio-venous aneurysm.

Case 3.

One patient who had received a contusion of the lumbo-sacral cord in association with a skull fracture presented a persistent loss of motor function out of proportion to the sensory loss, resulting in a diagnosis of hysteria. The patient arrived in poor condition, screaming at the slightest attempt to move him. He sat upright in bed with his knees and thighs flexed and his feet in extreme equinus, resulting in stretching of his sciatic nerve and causing severe pain in the buttocks requiring morphia for relief. Manipulation of both legs under an anaesthetic permitted the application of light casts to maintain position. The pain in the buttocks disappeared and the patient no longer required morphia. He underwent a complete personality change. The apparently complete paralysis cleared up to a considerable extent.

Case 4.

At least four severely compounded fractures of the humerus have arrived in "hanging casts". In one instance a long spicule of bone had impaled the radial nerve producing paralysis which required open reduction and neurolysis at an unfavorable time.

Case 5.

Capt. F., wounded in action with shell fragments, at 14:00 hours, 29 April 1943. At Clearing Station diagnosis made of (1) Wound, penetrating, popliteal space, right. (2) Wound, penetrating, lacerating, right tibial artery. (3) Severe hemorrhage. The wound was debrided and the popliteal artery ligated. On 30 April 1943, a sympathetic block of lumbar, 1st, 2nd, 3rd, and 4th was done. There are no further notes until 6 May 1943 when patient was received at -- Evacuation Hospital, where gangrene of the foot was noted. On 8 May 1943, with the extension of the gangrenous area, an amputation was done through the lower third of the thigh in hopes of saving

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as much of the leg as possible, but with the remark that further amputation might be necessary later. On 9 May 1943, he was received in quite an ill condition at the -- General Hospital, with severely infected and sloughing stump, which had been loosely closed with sutures. Here the amputation, in my opinion, should have been higher and it was poor judgement to send out a closed wound under such wound conditions as existed so soon after amputation.

Case 6.

Pvt. J. E. C., was wounded in action 23 April 1943, with a shell fragment wound of left side of chest. Patient passed successively through the F. A. and Clearing Stations and reached the -- Evacuation Hospital on day of injury. Under gas-oxygen-other intratracheal anaesthesia the wound of entrance was debrided, 25 cms. of the 8th rib resected and 250 cc of blood aspirated. A foreign body was removed from the lung, the lung was sutured and chest wound closed. No further notes from the Evacuation Hospital. Patient transferred to -- Evacuation Hospital 4 May 1943, where a diagnosis was made of hemopneumothorax and atelectasis or surgical removal of the lung. He was admitted to the -- General Hospital 5 May 1943, where X-ray showed complete collapse of both lobes of the left lung with large amount of fluid and air in left pleural space. The roentgenologist also diagnosed a precipitation of fibrin in the base reaching up to the 6th rib in the mid-axillary line.

Case 7.

Pvt 1 cl. L. K. was wounded in action by a shell fragment in the right chest on 23 April 1943, 09:45 hours. He passed through the Field Artillery Station and thence to the -- Evacuation Hospital at 12:25 hours, 23 April, where diagnosed (1) Penetrating wound, right lateral chest. (2) Foreign body in right pleural space. (3) Haemopneumothorax. (4) Subcutaneous emphysema. (5) Laceration of right lower lobe of lung. (6) Fracture 5th right rib. On 24 April 1943, under gas-oxygen-ether anaesthesia, intratracheally, a large sucking wound of entrance was excised, 15 cms. of fragmented 5th rib were removed, 600 cc of blood aspirated, and a 2 inch laceration of the lung was sutured. The wound was closed after putting 5 gms. of sulfanilamide in pleura and chest wall. Eighteen hours post-operative a flapper valve tube was put into the 2nd interspace because of a positive pressure pneumothorax and subcutaneous emphysema. On 29 April he was sent to the -- Evacuation Hospital where chest aspiration was attempted without success. The patient was admitted to the -- General Hospital on 5 May 1943 where X-rays showed a right hemopneumotherax with fluid level at 6th space and lung collapsed against the mediastinum.

Case 8.

Capt. H. T. McW. was wounded in action at 10:00 hours, 7 May 1943, in the chest. Cared for by Treatment Station of Armored Medical Battalion and -- Surgical Hospital. This man arrived at -- General Hospital on 17 May with an X-ray of the chest which looks almost normal, lung completely expanded and no air or fluid present.

Case 9.

Pvt. P. A. M. wounded in action about 10:00 hours, 8 April 1943. Shell fragment passed through right chest with resulting brachial palsy. No largehaemorrhage. Radial pulse absent when first seen but returned after operation at Clearing Station, where wound in shoulder was closed tight and an exploratory laparotomy performed with no pathology found. On 9 April he was transferred to the -- Surgical Hospital. Patient dyspnoeic, pulse 140, and having occasional hemoptysen. 260 cc of blood aspirated from right chest and oxygen administered and 100 cc of blood given. No X-ray taken and further aspirations in 1st and 2nd spaces were negative for blood or tension pneumothorax. On 15 April condition described as "very poor", temperature 102.2, pulse 110, respiration 30.

Transferred to -- Evacuation Hospital 16 April 1943. Marked abdominal distension; 2 pockets in chest aspirated and 350 cc of old blood, and 100 cc blood and 100 cc air obtained -- all with foul odor. At operation 18 April, a very foul haemothorax was found with masses of necrotic fibrin. A foreign body 3 x 2 x 2 cms., covered with clothing, was present in the lower lobe, which was necrotic in this portion. A long segment of the 7th rib was removed and the pleura widely incised. Foreign body removed and drainage established. Patient transferred to Hospital in Zone of Communications 22 April and still has an extensive empyema cavity on 12 June 1943.

Case 10.

Sgt. G. T. was wounded in action by mortar shell fragments on 28 March 1943. He was sitting on side of a trench with the thighs abducted and knees and thighs flexed. The projectile hit him from below, entering the right buttock in the gluteal crease and passing upwards to the left through the sacro-iliac joint and sacrum to land in tissues of the left buttock. He was operated on by the -- Surgical Hospital on 29 March. The abdomen was explored but no damage found. The wound of entrance was excised and packed. The patient remained at this hospital until 10 April. His course there was apparently quite stormy, with much pain in the left buttock, where an abscess was apparently developing, chills and fever up to 104.2 and W.B.C. of 22,750. The abdomen stayed soft. An X-ray showed a foreign body at lower end of left sacro-iliac joint. On 10 April the patient was transferred to the -- Evacuation Hospital, where the abscess of the buttock was opened and through another incision the foreign body was removed. Rectal involvement was at that time evident and on 12 April a left inguinal colostomy was done. He was admitted to -- General Hospital 18 April 1943, very ill, with extensive infection of pelvic tissues, and seriously depleted from prolonged severe infection. It is obvious that the initial infection would not have been prevented by an immediate colostomy, but the course of the subsequent infection would surely have been less stormy.

Case 11.

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Cpl. P. M. D. was wounded in action on 29 April 1943, near Mateur, Tunisia. He was held captive by the Germans for 3 days, receiving very little

care as did German wounded, because of stress of circumstances. On 3 May he was admitted to -- Evacuation Hospital where there was found a wound of entrance on the inner aspect of right thigh and wound of exit in perineum near the anus. The wounds were debrided and dressed with sulfanilamide and vaseline gauze, and on 4 May he was evacuated to the -- Evacuation Hospital. Records show the wound was dressed on 5 May, at which time rectal examination was done, ("No opening felt?") and an enema given. A question of fecal fistula was brought up and note made that the wound had "fecal secretion". 7 May a diagnosis of fecal fistula through posterior wound was made. On 9 May patient was evacuated to -- General Hospital, where on 10 May a left inguinal colostomy was done.

Case 12.

Pvt. R. A. was operated upon by Capt. Robert L. Norman, of -- Evacuation Hospital because of symptoms of acute appendicitis. Findings were a mass posterior to caecum and a normal appendix. Biopsy of the mass taken and tissue sent with patient along with careful operative notes.

Case 13.

Pvt. 1 cl. V. H. D. wounded in action by strafing 5 May 1943; severe penetrating wounds of right and left ankles. Pressure bandages and sulfanilamide ointment applied and 12 hours later wounds were excised at -- Medical Battalion Treatment Station. He was evacuated to -- Evacuation Hospital where he was watched carefully for gas gangrene and on 7 May both legs were amputated. He was a very sick man and post-operative notes show that Capt. E. K. Bosworth saw patient every few hours day and night from time of operation for following week and not only gave personal care and attention, to which patient owes his life, but made careful notes on the post-operative record. Subsequent course of patient after leaving Capt. Bosworth's care is not so happy. Patient was admitted to -- Evacuation Hospital 15 May in generally good condition, according to admission notes. The patient later, 17 May, developed consolidation of left base, and on 19 May he was evacuated to -- General Hospital with a bilateral pneumonia, fibrinous pericarditis, and a temperature of 103.2. Recovery at this moment seems doubtful. The course of case after leaving Capt. Bosworth does not detract from his careful records.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

26 June 43.

CIRCULAR LETTER NO. 19

I - STRENGTH OF PROTARGOL SOLUTION IN VENEREAL PROPHYLAXIS.

1. Numerous cases of non-specific urethritis have been reported as a result of the intra-urethral injection of two percent (2%) strong silver proteinate in the standard venereal prophylaxis.

2. Hereafter the strength of strong silver proteinate (Protargol) used in venereal prophylaxis in this theater of operations will be seventy five hundredths of one percent (0.75%).

II - HERNIATED NUCLEUS PULPOSUS.

When a diagnosis of herniated nucleus pulposus (ruptured intervertebral disc) is made in Army personnel, the patient is to be transferred to the Zone of Interior without operation, provided he is unable to maintain limited or full duty status in this theater. In exceptional instances operation may be performed but only on written recommendation of a Disposition Board of a General Hospital.

III - OPERATIONS FOR DISLOCATION OF THE SHOULDER.

Open operation for dislocation of the shoulder is to be undertaken only on the recommendation of a Disposition Board of a General Hospital.

IV - OPERATIONS ON THE KNEE JOINTS.

1. Careful surgical judgement is to be exercised in the selection of cases for excision of semilunar cartilages. A history of locking is essential. Instability of the knee joint is a contraindication. Post operative care in the form of early weight bearing without crutches and exercise of the quadriceps muscle groups instituted early under supervision is essential to recovery.

2. Operations for major knee disabilities such as repair of collateral or cruciate ligaments, or removal of both cartilages are to be undertaken only on recommendation of a Disposition Board of a General Hospital.

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For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

14 June 1943

CIRCULAR LETTER NO. 18

SUBJECT: Forward Surgery and Auxiliary Surgical Teams.

1. Experience in the North African Theater of Operations from the landing to the termination of the Battle of Tunis has repeatedly demonstrated the following facts:

2. The furthest point forward at which primary surgery can be well done is there certain essentials can be assured:-

a. An experienced surgeon, anaesthetist and operating room personnel.

b. Simple but adequate operating room equipment.

c. Lighting and water supply.

d. Reasonable accomodation under shelter.

e. Good, but not necessarily female, nursing.

f. Facilities to retain some of the more serious cases for a week, or better, ten days.

3. These facilities are provided by Field Hospitals and Evacuation Hospitals.

4. Only a limited amount of surgery can be done in a Clearing Platoon even though set up as a temporary surgical hospital from the Corps or Army troops close to the Divisional Clearing Station. Surgery may be possible under such conditions but it will not be well done.

5. The function of the Divisional Clearing Station is seriously impaired by any attempt to perform surgical operations. Surgery at such an installation, other than the usual simple emergency procedures is more hazardous than beneficial. The functions of a Clearing Station are outlined in FM 8-5 and include:

a. So much of second echelon medical [illegible] as is involved in-

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(1) Admission, emergency treatment, and temporary care and shelter of casualties delivered to the clearing station, usually by one or more of the collecting companies.

(2) Sorting of all casualties admitted and their classification into the following groups-

(a) Those that may safely be returned to duty at once. (Every effort must be made to prevent any casualty leaving the Division area who can be returned to duty.)

(b) Those not fit for duty at once and whose condition permits further evacuation without delay.

(c) Those requiring emergency care or treatment for an indefinite period before they can safely be evacuated further. Such non-transportables must be transferred to the adjoining Surgical Hospital (Platoon of Field Hospital plus Surgical Teams). Keep your Division free to move.

(3) Preparation of evacuees for further evacuation.

(4) Proper disposition of all casualties admitted as indicated by the classification in (2) above, and in addition of those who die in the clearing station.

(5) Preparation and maintenance of records of casualties, and the submission to the division commander through prescribed channels of required reports of casualties.

b. In special situations, as much of third echelon medical service as is involved in the definite care and treatment of short duration cases.

c. Usually, first echelon medical service for the medical battalion.

6. The Surgical Teams of Auxiliary Groups are designed to supplement or relieve surgical personnel of hospitals equipped with facilities for primary emergency surgery. These facilities have been listed in par. 2. Placement of these teams in situations where they cannot properly carry out their mission will necessarily result in a lowering of the standards of Forward Surgery.

7. Much has been written and said about carrying the surgeon to the wounded on the battlefield. Elaborate attempts to provide operating rooms on wheels have been found unsuccessful in the field the moment the surgeon advances beyond the point where facilities for after care of the patient are lacking. In this zone the primary function of the Medical Corps is centered in the transportation of the wounded back to the surgeon.

8. Field Hospitals and Evacuation Hospitals, particularly during their first weeks in the Combat Zone, have shown reluctance to receive Surgical Teams as supplement to their professional personnel. This has resulted in pushing such professional personnel beyond the point of maximum professional efficiency, and delay in providing surgical attention to the wounded at the earliest possible moment.

9. The proper use of Surgical Teams will not only lead to the more rapid treatment of battle casualties, but will further the quick establishment of acceptable surgical standards within a staff that has not previously been exposed to the problems of forward surgery.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

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H E A D Q U A R T E R S
NORTH AFRICAN THEATRE OF OPERATIONS
Office of the Surgeon
APO 534

12 June 43

CIRCULAR LETTER NO. 17

SUBJECT: NEUROPSYCHIATRIC TREATMENT IN THE COMBAT ZONE

1. The problem of neuropsychiatric disabilities under modern battle conditions has been a serious one. Approximately 20% of all non-fatal battle casualties are psychiatric in origin. Trial under actual field conditions in the Tunician campaign has shown that 60% of the total NP casualties can be returned to effective combat duty within 3 or 4 days if they are treated within the Combat Zone. The accomplishment of these results requires cooperation between Divisional Medical Officers, personnel of the Medical Battalions, and the psychiatrists of the ADC bed Evacuation Hospitals. It is for the purpose of outlining this proceedure that the present instructions are issued, and only by strict compliance with these precepts can such coordination be obtained.

2. Treatment.

a. Within the Regiment every effort will be made to retain and treat the milder cases of neurosis and particularly those men who give evidence of physical exhaustion. No case should be retained for treatment however in which more than 36 hours are required to return to duty. These milder cases may be adequately treated by returning them to the company kitchen area after brief explanation and reassurance as to the absence of any disease. They should be given hot food if possible, opportunity to wash, and a single dose of sedative (sodium Amytal gr. iij - Phenobarbital gr. iss) to insure sleep. They must be instructed to return to the Battalion Aid Station within the specified time.

The more serious cases are evacuated through the usual channels. It is essential that they be given an adequate dose of a sedative by mouth before they are evacuated. This dosage should be heavy (6 - 9 grains of sodium Amytal or 4½ - 6 grains of phenobarbital) and will materially facilitate the further treatment of the patient. Inadequate dosage is completely useless and morphine must not be given.

The only diagnosis which may be used on the EMT is the term "Exhaustion". In the past many of these men have been labeled "Shell Shock", "War Neurosis", "Blast Syndrome" etc and when the man reads his tage he immediately gains the impression that he has a serious or incurable disease.

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This attitude materially impedes treatment. Definitive diagnosis will be made at the Evacuation Hospital only.

The misnomer "Shell Shock" has been an outgrowth of misconceptions of the last war and it has often readily shown that there is no such condition. The Battalion Surgeon therefore should do everything in his power to "debunk" this term for the line officers and men and to stop its use.

b. Treatment within the sections of the Medical Battalion is confined to sedation. The aim of such treatment is to keep the patient thoroughly drowsy without converting him into a litter case. No definite dosages can be stated because such dosage is dependant on the previous one, the time elapsed since its administration, and the state of the patient. In general it can be stated that 15 grains of Sodium Amytal or ½ grains of Phenobarbital within 24 hours may be administered with complete safety. In the event that no sedation has been given in the Battalion Aid Station the initial dosage outlined under a above should be followed. Intravenous administration of Sodium Amytal should only be used in those cases in which it is impossible to administer sedation orally, and should be used with extreme caution in those cases who have had previous sedation.

The vast majority of neuropsychiatric cases can be transported as sitting cases. Many of these men will object to this but these objections can be overcome by firm insistence.

Adherence to the policy of sedation to the point of drowsiness will not only result in benefit to the patient but will also materially facilitate the handling of such a patient enroute.

c. Treatment in the Evacuation Hospital is determined by the judgement of the examining psychiatrist. Every effort should be made to continue sedation of these cases immediately evacuated. Sorting, definitive diagnosis, and specific treatment of psychiatric cases will be carried out at this level. Every effort will be made by the Evacuation Hospital psychiatrist to maintain personal liaison with forward medical installations.

d. Cases returned to duty from the Evacuation Hospital need not be given any preferential treatment. However some of them may return with minor residual complaints. Little attention should be paid to these minor complaints by the Battalion Surgeon as they are inconsequential. Reassurance as to the transient nature of these complaints should be given the man and he should be returned to duty. Judgement as to his subsequent effectiveness should be withheld until he has had at least a few days of adequate trial.

e. All of these principles will be followed, with necessary modifications, during any Combined Operation.

3. Differentiation of Cases:

It is obvious that no exhaustive discussion of "which cases should be retained for treatment within the Regiment" can be given in this memorandum. The problem is one for the Battalion Surgeon whose knowledge of the men and his behavior allows him to form a more accurate decision of this than any directive could possibly accomplish. In general the decision should be based on the estimated amount of time required to return the man to duty. From past experience it seems probable that cases showing physical exhaustion, perhaps admixed with minor fear symptoms, are the only ones who will benefit by this intra-unit therapy.

F. A. Blesse,
Brig. General, AUS,
Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

9 June 1943

CIRCULAR LETTER NO. 16

SUBJECT: MEMORANDA ON FORWARD SURGERY ESPECIALLY APPLICABLE TO AMPHIBIOUS OPERATIONS

1. General Principles of Wound Management:

a. Surgical operation performed under unfavorable conditions without facilities for proper after care is often more hazardous than prompt evacuation if the patient is transportable or can be made so.

b. Wounded evacuated by water should, particularly during early phases of combat, be so bandaged and splinted that they can swim or at least remain afloat should emergency require it.

c. Overdosage with morphia produces dangerous coma and respiratory depression that may delay the administration of an anaesthetic or render evacuation transport hazardous.

d. All wounds are left open after debridement, dusted with sulfonamide and loosely filled with vaseline gauze. There are no exceptions. (See below for specialized regional situations).

e. Only bruised and devitalized skin need be excised, and this with narrow margin. Avoid circumscision of wounds leaving circular defects by using linear extensions to gain exposure.

f. During debridement open all deep pockets and transversely divide fascial planes.

g. Do not pack wounds with gauze or sulfonamide.

h. Immobilize site of extensive injury even if fracture is not present.

i. Continue oral administration of sulfonamide.

j. Make notations on casts and on Field tags and records, (casts are frequently changed) particularly of what was done at operation. These notes are not merely for statistical purposes although essential as such.

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They are required for the subsequent care of the patient.

2. Plaster Casts.

a. Split or bivalve all casts as soon as dry. There are no exceptions.

b. Pad all casts and split padding as well as cast. Non-padded plaster is not suitable for transportation splinting.

c. Apply no circular adhesive or bandage under cast.

d. Maintain foot in neutral position with correction of tendency toward equinus, valgus or varus.

3. Compound Fractures.

a. Objects to be achieved in initial surgery are control of infection and safe, comfortable transportation. Reduction and rigid fixation of fracture can be accomplished at The Base.

b. Careful debridement as priority case. No internal fixation forward of Field or Evacuation Hospitals. Do not pack wound - loosely fill with vaseline gauze. Splint for transportation. Skeletal fixation or traction not recommended for transportation splinting.

c. Femur: Evacuate in Tobruk splint (See Appendix) as early as circumstances permit to reach Base for correction of deformity. A fractured femur should reach a General Hospital in the rear within 10 days. Do not evacuate with clove hitch or boot traction - use skin adhesive.

d. Knee-joint : In debridement minimize incisions that compound joint. Remove accessible foreign bodies. Irrigate joint with saline. Close synovial membrane. Loosely fill debrided wound with vaseline gauze. Evacuate early, immobilized in plaster or preferably Tobruk splint.

e. Leg: Careful debridement all wounds in multiple injuries, as circulation frequently impaired and gas gangrene likely. Penetrating wounds of calf may require incision for hemostasis as deep hematoma impedes circulation. Bivalve rather than split casts so inspection dressings may be possible without losing position in compounded fractures. Hold patient if circulation is questionable, otherwise evacuate as early priority.

f. Humerus: Use modified Velpeau plaster bandage to hold arm to trunk, or "U" plaster. Skin traction, skeletal fixation, high abduction spica and hanging cast unsuitable for transportation splinting.

4. Neuro-surgical:

a. Cranio-cerebral. Shave scalp three inches around wound. Remove gross superficial debris by gentle separation edges of scalp. Apply sulfonilamide cover with sterile pad. Evacuate as priority case preferably by air.

b. Spinal Cord: Same. Suprapubic cystostomy postponed until neurosurgical and x-ray evaluation of injury.

c. Peripheral Nerve: Describe findings on record. No suture.

d. Note the following abstract from "The Treatment of Head Wounds in Forward Area" by Brigadier Hugh Cairns, Consultant Neuro-surgeon, B.A.M.C.

(1) Middle East experience suggests that when the patient with a head wound is in good condition he should be evacuated without operation if he can be delivered to a Head Center within 72 hours of injury. The decision to hold or to evacuate should be made at the earliest possible moment after the patient reaches the forward hospital. Too often 24 hours or more are lost before the decision is taken.

(2) In cases which must be operated on in the forward area because there is no possibility of evacuation, the general surgeon should perform a limited operation. He should excise obviously necrotic skin, but not do a formal excision of the scalp wound. He should remove superficial blood clot and debris (dirt, hair, necrotic brain and bone), place in the wound sulfonilamide (unless there is a hole into the ventricle), apply a firm dressing (but no plugging or packing of the brain wound) and evacuate the case to the head center as soon as possible. Arrived at the head center, such a case should, after x-ray examination, be operated on again to complete the toilet of the brain wound.

(3) A small proportion of cases will require operation in the forward area because they are rapidly developing cerebral compression, with increasing depth of unconsciousness and the other symptoms of extradural and subdural clot. In these cases the wound must be thoroughly explored and the clot evacuated.

(4) Head injuries have proved to be among the most favorable cases for prompt evacuation by air.

5. Eye:

a. No excision of eyeball because of damage - only if necessary as part of wound debridement. Penetrating wounds evacuate lying. For injuries and foreign bodies instill 1% atropin. Apply soft pad and bandage both eyes if safe for method of transport available (see Section 1, b).

6. Maxillo-facial:

a. Clear respiratory passage. Maintain sitting or face down position. Tongue traction. Do not remove fragments of fractured mandible unless certainly devitalized. Soft part closures only after dental splinting.

b. Inter-dental wiring with elastic band traction fixation. Evacuate by air to avoid sea-sickness.

7. Chest:

a. Temporarily close sucking wounds by pad of vaseline gauze held firmly by adhesive strapping. Insert small catheter 2nd interspace anteriorly to relieve pressure pneumothorax. With extensive surgical emphyrema relieve pressure pneumothorax.

b. Initial definitive surgery limited to debridement and closure wound of chest wall without complete suture of superficial layers and skin. Local anaesthesia often satisfactory and avoids hazards of asphyxia. Transfuse slowly and only when essential.

c. Evacuation by air as priority case. Preliminary aspiration hemothorax without air replacement.

8. Abdomen:

a. First priority for emergency surgery. Close abdominal wall with stay sutures.

b. Exteriorize large bowel and rectum perforations or perform proximal colotomy. There are no exceptions.

c. Examine carefully for evidence of abdominal penetration all casualties with entrance wounds in buttocks or chest.

d. Perforation of intestine, particularly ileo-cecal region and multiple, is caused by hydraulic blast wave from bombs exploding in water. No external evidence of injury.

e. Always leave supra-pubic cystostomy in closure of perforation of bladder.

f. Hold abdominal cases after operation until equilibrium is established (4-5 days). This is essential, as even simple cases die as a result of early transport. Leave Levin tube in place during transport.

9. Burns:

a. Cleansing may be limited to removal of gross debris and thick coating of oil by mechanical means.

b. Apply boric ointment or vaseline gauze, cover with sterile reclaimed waste and bandage firmly. Burns damaging eyes require closure by bandage.

c. For emergency transport by water do not obstruct vision or respiration by bandaging. Leave jaw free for possible vomiting.

d. Shock in burns is often delayed for 4 to 6 hours. Use this period for evacuation when possible. Otherwise extensive burns must be held until equilibrium is established. Most flash burns are partial thickness injuries with small patches of full thickness loss. Life endangering shock not common unless surface area is unusually extensive or unless environmental temperature is immoderately high.

10. Amputations:

a. Circular type guillotine is amputation of choice. In forward surgery performed for control of hemorrhage, destruction of circulation, removal of an irreparably destroyed extremity, and as a step in the debridement of a traumatic amputation. The site is the lowest possible level of viable tissues regardless of the eventual utility of the stump.

b. Gas gangrene infection occurs in certain cases with 24 hours delay in evacuation from the field. Amputate only if more conservative surgery and full dosage (60,000 to 100,000 units of polyvalent anti-toxin) are judged inadequate.

c. Apply skin traction on the operating table and maintain during evacuation.

d. No exceptions. There are no exceptions.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

Incl: Appendix

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APPENDIX

Tobruk Transportation Plaster.- Recommended for fractures of the femur, wounds involving the knee joint and fractures of the leg near the knee.

1. Dress wound and retain dressing with strips of adhesive plaster. No circular dressing or bandages should ever be put on under a plaster case.

2. Support patient with a pelvic rest, or bowl under sacrum. One assistant holds the foot by the heel and toes and exerts traction. The foot is kept at right angles. A second assistant supports the fracture and keeps the knee bent at 10 degrees flexion with the palms of the hands not the fingers.

3. Apply traction strapping as close up to the wound as possible. Fold distal ends of straps into cords.

4. Pad the heel and malleoli with wool. Turn back the traction straps from the region of the malleoli while winding the wool round. Pad the knee prominences similarly. There have been some cases of foot drop from pressure on the external popliteal nerve. Pad the upper part of the thigh close to the ring of the splint with a layer of wool. Pad the entire extremity with sheet wadding or stockinette.

5. Lay a strip of tin (obtainable from ration boxes etc.) wrapped in paper over the anterior surface of the length of the limb to beyond the toes.

6. Prepare a plaster slab (6 thicknesses) - apply posteriorly as high as possible and distally over heel and sole of foot to project 3-4" above the toes.

7. Complete plaster cast with circular bandages round the slab enclosing the whole of the leg and foot except the dorsum of the toes and mould. Do not cover over traction straps further than just above the malleoli.

8. The traction straps are now emerging from the plaster just above the malleoli. Turn them back and cut the plaster away free where they emerge, sufficiently to free the straps from the plaster. This allows the traction to be on the leg and not on the cast. Trim the plaster over the dorsum of the toes. See that the little toe is free.

9. Apply Thomas Splint preferably half-ring and fit lower part of ring against Tuber Ischii and adductor muscles. Hold up ring so as to obtain correct position and insert pads of wool anteriorly and laterally between the ring and the thigh to maintain the position. Tie traction straps to notch in splint and insert spreader and Spanish Windlass.

10. Wind plaster bandages round the side bars of the splint, and round the limb to anchor the splint to the limb.

11. Support distal end of splint with splint bracket.

12. When plaster is moderately firm cut down on thin strip over whole length plaster and withdraw strip and split the plaster. Cut the underlying padding with scissors or knife. It is not necessary to cut stockinette.

13. With indelible pencil draw diagram of fracture and write simple details, date of wounding, treatment, date of application of plaster, unit etc.

NOTE. This splint is only intended as a transportation splint for the journey to the base. There is no need to aim at accurate apposition in the Forward Area. On arrival at the Base Hospital X-ray examination should be made, position corrected if necessary and routine treatment employed.

This form of fixation will do quite well even for fractures of the upper third of the femur for transport.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534

26 May 1943.

CIRCULAR LETTER NO. 15

SUBJECT: Memorandum upon the Pharmacology of Atebrin and Quinine, Treatment of Dysentery, Sulfamerazine, the Disposition of Neuropsychiatric patients from Station or General Hospitals, and Rabies.

1. Pharmacology of Atebrin and Quinine. Until the past year no method for the quantitative measurement of atebrin or quinine in the body fluids or tissues has been available.

a. Recent studies have shown that the chemotherapeutic activity of atebrin is related to its concurrent concentration in the blood plasma. On the usual doses given for suppressive therapy, i.e. 0.2 grams of atebrin bi-weekly, or 0.1 gram four days a week, there occurs a progressive localization of atebrin in the body. Such localization finds expression in a progressive increase in the plasma concentration which may proceed for as long as three or four weeks, prior to obtaining maximal concentrations, on a given regime of therapy. However, a remarkable finding is that there are wide variations in the concentrations of atebrin in the plasma of individuals who are given identical suppressive doses of the drug over a period of three or four weeks. One individual upon suppressive treatment may have a plasma concentration of 10 to 20 micrograms of atebrin per liter while in the next individual the concentration will be 50 to 60 micrograms per liter at the end of this period. From a practical point of view, these observations are of great importance in explaining break throughs of malaria in individuals who have conscientiously taken suppressive medication. When atebrin is administered in the therapeutic doses outlined in Circular Letter # 6, Office of the Surgeon, NATOUSA, dated April 10, 1943, the concentrations of the drug vary from 5 to 15 micrograms per liter of plasma by the end of the first 24 hours and gradually build up to concentrations of from 30 to 100 micrograms per liter at the end of the 5 day period of therapy. This is of interest because it demonstrates that if quinine was lacking and it seemed desirable to establish quickly, an effective suppressive level of atebrin in the blood, this could be done by administering 0.1 gram of atebrin T.I.D. for 5 days, and thereafter continuing suppressive therapy on either 0.2 grams given twice each week, on Mondays and Thursdays, or 0.1 gram of atebrin on Monday, Tuesday, Thursday, and Friday of each week.

b. It has been shown that following the administration of quinine in either suppressive or therapeutic doses, the drug is entirely excreted from the body within 36 hours after the final dose. This means that if an individual who has been on suppressive therapy with quinine is changed to the usual suppressive therapy with atebrin, he will be at risk as far as a break through or of actually contracting malaria is concerned, during the three or four week period required to build up adequate concentrations of atebrin in his blood.

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2. Dysentery. Recent carefully controlled studies have shown that there is little to choose between in effectiveness of sulfaguanidine and succinyl sulfathiazole in the treatment of bacillary dysentery. However, in dysentery produced by strains of Flexner or Schmitz bacilli, sulfadiazine was much more effective than either of the two drugs mentioned above, in that it caused a disappearance of positive stool cultures and brought the stools to normal in much less time than when the above two drugs were used. In Sonne bacillary infections all three drugs appeared to be equally effective. Studies upon the effects of sulfadiazine upon Shiga bacillary infections were not reported. It is therefore suggested that in bacillary dysenteries produced by Flexner, Schmitz or Sonne bacilli the administration of sulfadiazine, initial dose - 2.0 grams, subsequent doses, 1.0 grm every eight hours, be considered in the treatment of the above mentioned types of infection. The total period of treatment must depend upon the response of the individual patient to therapy, but should be continued for at least 4 days.

3. Sulfamerazine. This drug is the methyl derivative of sulfadiazine (2 - sulfanilamide - 4 - methyl pyrimidine) and is of interest because it is excreted so slowly that adequate concentrations of the drug can be maintained upon a dosage schedule of one dose every 8 or 12 hours. From the therapeutic point of view the drug is as effective as sulfadiazine in the treatment of bacterial infections and is not more toxic than sulfadiazine. This drug is not available at present in NATOUSA but should be, in limited quantities, by fall.

4. Disposition of neuropsychiatric patients from Station and General Hospitals. The attention of all medical officers and especially that of the psychiatrists in station and general hospitals is directed to section III, NATOUSA Circular #79, dated May 6, 1943. In interpreting this paragraph, it is requested that psychiatrists in station and general hospitals be specific in their designations of the type and place of duty in which the rehabilitated neuropsychiatric patient may continue in this theater. Such terms as "base section", quiet sector", "rear area", etc., should not be used. The psychiatrist should realize that such terms are of little value in helping reclassification boards to place the neuro-psychiatric convalescent patient in the situation in which he can perform his duties most effectively. Rather, it should be stated first, - the corps or service in which it appears the man could be most useful, secondly the geographical area, which in the opinion of the psychiatrist will be least likely to produce a recurrence of the patients symptoms should be designated.

5. Anti-Rabic immunization. On interpreting section IV, NATOUSA Circular #83, dated May 11, 1943, attention is called to the fact, that if the offending dog cannot be apprehended and confined for observation, the bitten patient should be sent immediately to the medical installations designated in Circular #83.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

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H E A D Q U A R T E R S
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 534.

16 May 1943.

CIRCULAR LETTER NO. 14

PERSONAL RECORD FORM FOR SYPHILITIC PATIENTS

1. Frequent separation of syphilitic patients from their syphilis Registers in this Theater of Operations has resulted in serious lapses in treatment schedules which greatly decrease the value of treatment and increase the probability of complications.

2. In order that uninterupted treatment for syphilis may be assured, all syphilitic patients will be furnished with a Personal Lues Record, NATOUSA MD Form No. 1, containing a brief summary of diagnosis, progress and treatment which they will retain in their possession and which they will present to the Medical Officer at the time of each examination or treatment. It is imperative that all successive treatments be entered including data concerning drug reaction and pertinent examinations.

3. The Personal Lues Record will be a supplementary form and will not replace the Syphilis Register. Syphilis Registers will be maintained as heretofore. When necessary, data will be transcribed from the Personal Lues Record to the Syphilis Register in order that the register may be complete.

4. Medical Officers will be responsible for impressing upon the patient the seriousness of his disease and the necessity for continuous, uninterrupted treatment. The necessity for preserving the Personal Lues Record form will be carefully explained to the patient.

5. The Personal Lues Record Forms will be initially issued the Surgeon of Base Sections, Armies, Corps, and Air Force for distribution. Additional copies of this form may be procured by addressing requests to The Surgeon of the Base Section concerned.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

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H E A D Q U A R T E R S
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 512

15 May 1943.

CIRCULAR LETTER NO. 13

MEMORANDA ON FORWARD SURGERY

1. Surgical Echelons.

a. The welfare of the patient and the tactical necessity for rapid evacuation demand a clear understanding of the function or mission of each unit of the Army Medical Corps. This is best arrived at by dividing the treatment of a casualty into two stages - primary and definitive. Separate groups of units provide each stage of treatment. In general, the equipment of each group is designed for that purpose only.

b. Stations of the first and second echelons - Aid Stations, Collecting Stations and Clearing Stations are equipped and staffed for the primary phase of treatment. Arrest of hemorrhage, splinting of the injury, resuscitation measures needed to make the patient transportable and administration of sulfonamides are the urgent functions of these stations. In addition, the treatment of minor injuries that allow immediate return to duty is carried out without evacuation. A Clearing Station is not designed to provide definitive treatment of battle casualties.

c. During combat, especially with long distances in evacuation to the rear Surgical Teams are attached to certain Clearing Stations. It is their function to give emergency surgical treatment to selected cases requiring immediate operation. This treatment would not otherwise be available in this echelon. The lack of facilities for pre-operative X-ray examination and for post-operative care of adequate duration place a grave responsibility on the surgeon in the selection of cases for surgery. These same limitations exist during quiet times. The length of the evacuation line to the next echelon and changing tactical conditions require frequent redefinition of the surgery undertaken in the clearing station.

d. It must be remembered that the lightly wounded soldier, or a casualty due to recurrent may regain full combat status within the Theater if proper surgical treatment is carried out, but the Theater may be deprived of his service by faulty surgical judgment. Because a surgical procedure appears simple is not sufficient reason for performing it in a Clearing Station unless the man can be returned to immediate duty without evacuation to the rear.

e. Hospitals of the third echelon (Evacuation Hospitals) are designed to initiate definitive surgical treatment to battle casualties. The more delay there is before reaching this echelon and the more hands the patient passes through in reaching it, the poorer will be the final result. The evacuation line is not an assembly line in which each surgeon does his bit to the patient. It is a convoyance

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line also, the course of which the progress of the patient may be halted to save life or limb or render him transportable.

f. While Evacuation Hospitals are adequately equipped and staffed to perform rehabilitation operations, it is not the function for which they were designed. Even in quiet times these patients are evacuated to the fourth echelon for operation unless the Commanding Officer assumes full responsibility based on a knowledge of the existing tactical situation as well as the surgical aspects of the individual case.

2. Surgical Procedures.

a. Dressings: Ideally, the primary phase of treatment is completed in the first unit reached that is equipped to provide it. The dressing is then left undisturbed until the patient reaches an Evacuation Hospital for operation. There are certain safeguards and adjustments that must take place enroute, but these do not include inspection of the wound or removal of the dressing unless definite indications are present. A compound fracture is halted at the Clearing Station for more adequate immobilization or resuscitation, but this need not involve redressing the wound unless there is reason to arrest continuing hemorrhage. A wound is not redressed solely for the purpose of reapplying local sulfonamide. Oral administration is sufficient safeguard.

b. The same principles apply after operation has been completed and the patient is being evacuated to the rear.

c. Uninformed hands do unnecessary dressings. The best safeguard for the patient is an adequate and legible record that accompanies him. A receiving officer is then in a position to refer to the record instead of looking at the wound. Many wounds after debridement and arrival at the base can be closed by secondary suture. Infection arising from contamination at the time dressings are changed makes this impossible.

d. Wound Management: Common mistakes in war surgery are: (1) Suture of wounds. (2) Fluid Plugging of Dead. Hemorrhage is controlled by a stitch ligature if from a large vessel. Otherwise, by a tamponny pack, elevation and firm pressure. If a pack is left in a wound make a note that it should be removed at the first opportunity. Vaseline gauze is laid loosely in a wound, not packed in. (3) Failure to Immobilize Site of Injury. Large wounds are immobilized even though fracture has not occured. (4) Overexcision of Skin. Circular defects are slow to heal. Very little skin need be excised, and in many instances none at all. (5) Failure to Open Deep Spaces during definitive treatment by freely incising fascial planes.

e. Head Wounds: Gently separate the edges of the scalp wound, remove superficial dirt and blood clot, and cover with gauze. Holding the gauze in place shave the scalp for three inches away from the wound. Remove the gauze, treat the wound with sulfanilamide (not sulfathiazole) and apply dry gauze sponge held in place by sutures to the wound edges or strips of adhesive and bandage. Write on the E. A. T. Dressing not to be removed before operation. Note the time of the wound and the duration of any period of unconsciousness or mental confusion if these facts can be obtained. Germans or contrue sulfathiazine by mouth. Evacuate as priority case to nearest hospital equipped and staffed for neuro-surgical procedures. A transport time of 48 to 72 hours is not an indication for an attempt to carry out surgery forward of an Evacuation Hospital.

f. Eye Injuries: It is never necessary to excise an eyeball in the Forward area because it is damaged. There is no danger of sympathetic opthalmia for two weeks. Any man suspected of having a penetrating wound of the eye is to be evacuated lying in order to prevent escape of vitreous. For injuries and foreign bodies in the eye instill 1% atropin and apply an anaesthetic ointment such as butyn and metaphen. Immobilize the lid with a patch or bandage. Many patients evacuated for eye injury arrive at a hospital with the pupil contracted in spasm so that examination and treatment is delayed.

g. Unless wounds and lacerations of the eye-lids are sutured with special plastic procedures, function is disturbed.

h. Ear: Do not put drops in the ear for blast injury. Lightly pack with cotton.

i. Chest: A sucking wound of the chest is closed tightly enough to prevent to and fro chests of air with respiration, but not so tight that air cannot escape from the chest if a pressure pneumothorax builds up from an accompanying wound of a bronchus. Close with a pad of vaseline gauze folded to fit the wound and held in position by adhesive plaster. One or two sutures penetrate the pad so that it is not lost into the pleural cavity.

j. Pressure pneumothorax requires prompt release by needle aspiration. If it reforms, insert a small catheter in the second interspace anteriorly.

k. Oxygen therapy may be as important as plasma. Aspiration of blood and air may make a man transportable that cannot otherwise be moved. Replacement of aspirated blood by air is rarely advisable. Internal bleeding is usually from the chest wall requiring revision of the (1) wound of exit and (2) wound of entrance; or it is from a large visceral or mediastinal vessel requiring thoracotomy.

l. Definitive surgery for thoracic wounds is postponed until x-ray examination can be carried out. It is disastrous to assume that large retained foreign bodies will not promote infection.

m. Abdomen: Perforation of abdominal viscera occurs with unusual sites of entry. Casualties with wounds of the thighs, buttocks and chest are examined with this in view. Transfer to priority case to a Clearing Station with Surgical Team attached or to an Evacuation Hospital, whichever is quicker. The large intestine must be exteriorized or drained after any injury, however trivial. If the injured part is mobile, it is resected and brought to the surface as a double barrelled colostomy. If it is fixed, the injury is repaired and a proximal colostomy performed. Any injury of the rectum, especially an extra-peritoneal one, demands a proximal colostomy. In the Middle East this principle of exteriorization of colon injuries has been cited as perhaps the most important advance in the surgery of this war.

n. Abdominal incisions are closed with the added support of through and through stay sutures. Not the large intestine has been perforated it is not advisable to suture the skin. Insert a folded strip of vaseline gauze held in place by the stay sutures tied over it.

o. Bladder: No perforating wound of the bladder is closed without estab-

lishing suprapubic drainage. Cord injuries complicated by retention of urine may be managed by an indwelling urethral catheter until the neuro-surgical implications of the case have been studied.

p. Compound Fractures: It is essential to distinguish splinting applied for a limited time as a transportation splint from apparatus or splinting designed for reduction and prolonged or rigid immobilization. An adequate transportation splint prevents additional soft part injury and further deformity. It cannot in itself cause nerve injury, pressure sores, or jeopardize the circulation of the extremity. It provides adequate fixation for ambulance transport over rough roads, but may not secure the fragments in rigid fixation or exert the traction necessary for further reduction.

q. Plaster Casts: A more liberal use of plaster of paris casting is urged. Plaster casings or slabs applied as temporary transportation splints are padded and either bivalved or completely split. Encircling bandages and cotton rolling under the cast is also split as it soon becomes inflexible with dry blood or serum. Plaster casings applied directly to the skin are rarely found advisable in forward areas. If a skin plaster is applied for a definite indication, bony prominences are padded and the cast is immediately split in its full length. No encircling bandages or adhesive strips are placed under a plaster.

(1) All plaster casts applied in forward areas should be split or bivalved as soon as sufficiently dry.

r. Skeletal Traction: There is no indication for the use of skeletal traction or skeletal fixation in conjunction with transportation splinting in the forward area.

s. Internal Fixation: The use of bone plates or screws is not recommended in stations forward of an Evacuation Hospital.

t. Humerus: Skin traction, skeletal traction and high abduction spica plasters or splinting are not only uncomfortable but dangerous transportation methods. A hanging plaster is unsuitable for transportation purposes. A simple U plaster slab running from the affected shoulder over the [illegible] of the forearm and upward to the axilla is usually sufficient. This may be held in position by a bandage sling. Following definitive surgery, the same type of splinting may be used for further transport, or a carefully applied spica with limited abduction (30° - 35°) may be used.

u. Femur: Traction applied by a clove hitch, ankle bracelet or through the boot is not advisable for longer than six hours. This type of traction should be changed to skin traction at the Clearing Station.

v. Attention is drawn to the Tobruk transportation splint highly recommended by the R.A.M.C. reports from the Middle East. Medical Officers should be familiar with the design and methods of application of this splint and a more frequent use is suggested.

w. If a plaster spica is used the extremity is fixed in slight abduction and care taken to see that the upper part of the cast does not impinge on the costal margin. If the other leg is not tied into the spica, and it rarely need be, the plaster casing is extended well above the cost l margin with fenestration provided for the abdomen.

X. Spica casting for either the upper or lower extremity must be well applied with adequate padding to avoid discomfort and pressure sores during transportation. These complications as well as easier application have led to the development of the Tobruk splint.

Y. Amputation: In military surgery an amputation is a two-stage operation - the first stage performed in the overseas theater, the final stage, if necessary, in the Zone of the Interior.

(1) The circular type Guillotine is the amputation of choice. The indications for primary amputation are control of hemorrhage, destruction of circulation, removal of irreparably destroyed extremity and as a step in the debridement of a traumatic amputation. The site of primary amputation is the lowest possible level of viable tissues regardless of the eventual utility of the stump so formed.

(2) Delayed amputation as performed for circulatory insufficiency, infection, gas gangrene in which more conservative measures have been inadequate or in the judgement of the surgeon will be inadequate, and uncontrollable secondary hemorrhage. The site of secondary amputation is determined by the judgement of the surgeon with respect to preservation of maximum bone length.

(3) Sulfanilamide is dusted on the end of the stump and vaseline gauze dressing applied. Skin traction is applied on the operating table and continued until the stump is healed. All lower leg amputations are splinted with a posterior slab to prevent flexion deformity of the knee. The splint extends below the level of the stump. Transport in a ring Thomas splint with support of the stump and continued skin traction.

(4) Adhesive plaster traction is recommended in the forward areas where a bulky dressing may be desirable. Stockinette applied with skin glue may be substituted at the base. Adhesive plaster traction strips must extend to the edge of the incised skin and be anchored by two circular strips. They should not extend upward beyond the base of the limb.

(5) Secondary closure of amputation stumps is not recommended.

Z. Peripheral Vascular Insufficiency: Following wounds that jeopardize the blood supply of an extremity transport beyond an Evacuation Hospital is delayed until the collateral circulation has been demonstrated adequate or until amputation has been performed. Immobilization for transport, or the additional trauma and shock incident to transport may be a determining factor in producing gangrene.

(1) Principles guiding treatment of a limb with defective circulation are as follows: (1) Immediate restoration of blood volume with plasma supplemented by whole blood transfusion to establish normal oxygen carrying capacity of the blood. (2) Prevention of loss of body heat by dry woolen coverings for body and limbs. (3) Do not ligate a major artery in continuity. Divide the vessel between ligatures. (4) Ligate and divide the companion vein. (5) The extremity supplied by the divided vessel should not be elevated but slightly depressed. Wrap in wool or cotton. Do not directly heat.

(2) To stimulate the development of collateral circulation the follow-

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ing measures are recommended: (1) Heat the body (not the limb) under a cradle. (2) Novocain block of sympathetic chain repeated daily if necessary (3) Under special circumstances, sympathectomy (4) Vasodilating drugs are of questionable efficacy. (5) Passive vascular exercises. (6) Incision of deep fascia planes if a tense hematoma is present.

(3) Arterial spasm may be encountered when a missile passes close to an artery or there is an adjacent fracture. There is no external bleeding or hematoma. The limb is cold, numb and muscle action lost. Peripheral pulses are absent. There is no pain in contrast to occlusion of the artery by an embolus.

(4) Peripheral pulses return in a few days as color and warmth reappear in the limb. Treatment is directed toward warming the body, and the use of sympathetic novocain block. If the vessel is exposed during debridement direct application of procain solution may be tried.

(5) All casualties with defective circulation in an extremity, particularly of the leg should be under close observation for the development of gas gangrene.

3. Whole Blood Transfusion. During the malarial season all personnel AUS, North African Theater of Operations, will be on suppressive atabrin therapy. It is recommended that no additional anti-malarial therapy be given either to recipients or donors of blood for emergency transfusions. If the transfusion is elective, atabrin 0.2 grams is given to the donor on the night before the blood is drawn. Quinine 0.64 grams (10 grains) given six hours before the transfusion may be substituted for the atabrin "booster" dose.

4. In addition to the above the following precautions should be observed:

(1) The donor is questioned as to whether or not he has had chills, fever or malaise.

(2) The donor's abdomen is palpated for the presence of an enlarged spleen. If the spleen can be felt, the donor is rejected.

(3) Thick and thin films of the donor's blood are examined for malarial parasites if laboratory facilities are available.

5. Wounds and surgical procedures that of necessity interrupt the atabrin suppressive regimen may lead to the appearance of clinical malaria during the surgical recovery period. Surgical officers are to be on the alert to differentiate malaria from other surgical complications. Atabrin administration is resumed at the earliest possible time in surgical patients.

F. A. BLESSE,
Brig. General, AUS,
Surgeon.

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H E A D Q U A R T E R S
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 512

7 May 1943.

CIRCULAR LETTER NO. 12

SUBJECT: Stomatitis Vincent's.

1. Stomatitis Vincent's, frequently called trench mouth, was prevalent during the World War I. It is a disease of the mouth which attacks the gingivae, tongue, cheeks, buccal mucosa, the throat, and the tonsils, producing a characteristic ulceration in which the Vincent's spirochete and fusiform bacillus are present. It is considered infectious and contagious. The infection is most frequently found in ill-kept mouths where sufficient care has not been exercised in cleaning the teeth. Factors which may contribute to the cause of the disease are dietary deficiencies, smoking, and trauma. It may be contracted through kissing, drinking glasses or cups, dishes, utensils, or food.

2. Symptoms. a. The disease in the acute stage is generally characterized by sensitive, very painful superficial ulcers, irregular in shape, and covered by a greyish white membrane that is easily removed and bleeds freely. The onset of the disease is sudden and a severe stomatitis may develop within a period of twenty-four hours. There is an increased flow of saliva, and the breath becomes foul having a characteristic putrid odor. The tongue frequently has a yellowish or whitish coating. The temperature may vary from 99° to 101° F., and in the more severe cases up to 103°. The submaxillary lymph nodes may be enlarged and painful, but do not become suppurative. The pulse rate may be slightly accelerated. The pain is generally severe and does not permit the brushing of the teeth.

b. The chronic stage is generally associated with chronic periodontal disease. The general symptoms are malaise, increased mental depression, restlessness, or uneasiness.

4. Suggested treatment. a. The Vincent's spirochete and fusiform bacillus are anaerobic organisms, and it is common practice to apply directly to the affected area an agent which liberates nascent oxygen. The teeth and tissues may be rinsed first with a mouth wash or water to remove the debris, and then a 7 to 10 percent solution of chromic acid applied directly to a section of the arch that has been isolated and dried. The mouth is again rinsed and the area dried whereupon is placed an application of potassium permanganate (2 percent).

b. Hydrogen peroxide as well as other agents have been used with appreciable success. Hydrogen peroxide, however, is generally not recommended

in cases where there is an associated jaw fracture or open wound.

c. The patient should ordinarily be seen twice daily for treatment the first day or two of an acute infection, and then once a day until the symptoms are relieved.

d. All oral surgery should be avoided, if possible, during the acute stage. Calculus may be removed after a few treatments which will permit a more rapid recovery. Frequently unsanitary bridges, crowns, or broken down teeth have to be removed or restored to prevent reinfection.

e. The patient should be instructed to avoid the use of tobacco, alcohol, spices, and all irritants. A mild cathartic is recommended. It is further suggested that fresh fruits, fruit juices, and green vegetables be eaten in liberal quantities. Separate dishes, glasses, and eating utensils should be used and each boiled after the meal. All febrile, as well as severe cases that do not have a temperature should ordinarily be hospitalized and a combined systemic and oral treatment initiated in collaboration with the medical officer.

For the Surgeon:

E. STANDISH,
Colonel, M.C.
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 512

13 Apr 43

CIRCULAR LETTER NO. 11

SUBJECT: DENTAL IDENTIFICATION RECORD FOR ALL FLYING PERSONNEL.

Circular letter No. 7, WD SGO, Jan. 2, 1943, subject as above, is herewith reproduced for compliance by all concerned, within the limits of this Theater of Operations:

"1. A complete Dental Identification Record for all flying personnel, including air borne troops and officers, in the military service will be made out by a dental officer on MD Form 79 (revised February 24, 1941).

2. On the face of this form, the information in sections one (1) to nine (9) will be completed. Sections 10, 11, and 12 will not be used, and the words "Dental Identification Record" will be written diagonally across sections 10, 11, and 12.

3. a. The reverse side of this form will be completed in detail, giving special attention to the chart on the upper half. All dental filling operations present in the mouth will be recorded. First, the surfaces involved will be entered, using abbreviations authorized in AR 40-1010, par 6. Under the surfaces involved, enter the authorized abbreviation for the filling material used. Caries will be recorded by a large oval filling the entire square, with the involved tooth surfaces indicated by the appropriate letters inside the oval. Missing teeth will be indicated by "X" in the square and nonrestorable carious teeth by a diagonal across the square. Bridges, dentures, and other prosthetic appliances will be entered, using the key indicated on the lower part of the reverse side of MD Form 79.

b. Below the chart in the space below "Other conditions" enter a detailed description of all prosthetic appliances. Any abnormalities or unusual conditions should be concisely recorded in this space. This form shall be dated and signed by the examining dental officer.

4. In accordance with (WD Circular No. 414, December 19, 1942, par. 2) the Dental Identification Record for enlisted flying personnel, including air borne troops, will be transmitted to the unit commander of each individual concerned, for attachment to the Soldier's Service Record. For flying officers this record will be made a part of the individual's Flight

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Surgeon's Record which accompanies all flying officer personnel on change of station. All air borne officers will have this record accompany the Officer's and Warrant Officer's Qualification Card, WD AGO Form No. 66-1, February 1, 1942, on change of station. For aviation cadets and others in the military service receiving flying training this record will accompany each such individual's physical examination for flying (WD AGO Form No. 64) to the schools attended while undergoing such training.

5. All subsequent dental operations after the initial examination will be recorded on the Dental Identification Record, WD Form 79. The Surgeon will be responsible that the latest changes in the dental condition of the flying personnel are recorded on the WD Form 79."

For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 512

10 Apr 43

CIRCULAR LETTER NO. 10

SUBJECT: DIAGNOSIS, TREATMENT AND HOSPITALIZATION OF THE VENEREAL DISEASES.

1. The following outline on the diagnosis, treatment, and hospitalization of the venereal diseases embodies recommendations made by the Subcommittee on Venereal Diseases, National Research Council as set forth in WD Circular Letter No. 74, July 25, 1942 and by a board of medical officers appointed by the Secretary of War as set forth in WD Circular Letter No. 32, February 1, 1943. Additional material applicable to the North African Theater of Operations is included. It is published as a guide to be followed by all medical officers in this theater of operations who are called upon to treat venereal diseases and since substantial changes from previous methods are here recommended it should be carefully studied.

2. Hospitalization of Venereal Disease Cases.

a. All male American military personnel requiring hospitalization for venereal disease will be promptly hospitalized in the venereal disease treatment centers operated for the purpose. In areas where such facilities do not exist they will be hospitalized in station or general hospitals.

b. Infectious syphilis will be hospitalized until two doses of arsenical have been administered. (See 4 b (6)(a). Undiagnosed lesions suggestive of infectious syphilis will be hospitalized until the diagnosis is established.

c. Duty Status Treatment of Uncomplicated Acute Gonorrhea.

(1) Uncomplicated acute gonorrhea may be treated on a duty status. Duty status treatment should be initiated by the surgeon with the approval of the commanding officer of the organization concerned.

(2) The early adoption of duty status treatment of uncomplicated acute gonorrhea wherever practicable is urged with a view to effecting a saving of hospital beds and reducing the time lost from duty.

(3) The efficiency of highly specialized military personnel may in some instances be temporarily impaired by the administration of sulfonamides. In particular, flying personnel should be grounded for the duration of treatment and six days thereafter.

(4) Status of Patient.

(a) The patient will be expected to perform full duty ordinarily although modification of the more rigorous assignments may in some instances be desirable.

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(b) The risk of transmission of the disease to others except through intimate sex contact is deemed to be negligible. For this reason it is recommended that no effort be made to segregate patients in barracks or mess. For aesthetic reasons some form of special toilet provisions may be utilized if desired.

(c) The soldier treated on a duty status should be restricted to the unit area until two weeks after complete cessation of symptoms in order to guard against transmission of the disease to the civilian population.

(5) Regularity of treatment and adequate follow-up are essential to the successful operation of duty status treatment. In accordance with AR 40-210, par. 23 f, a list of those undergoing treatment but not excused from duty will be kept both by the organization commander and by the surgeon. Such individuals will be required to report to a medical officer for systematic treatment.

(6) Records.

(a) The patients will be "carded for record only" as provided in AR 40-1025, par. 3, 4 c and 25 b. The surgeon will assure that all cases of gonorrhea are recorded on MD Form 86ab as directed by par. 2 j (3) and (7), AR 40-1080.

(b) A clinical record will be kept on each case. This record should be of the abbreviated single sheet type upon which all pertinent data including identification, details of treatment, and summary of the case can be entered.

(7) Loss of pay. Patients with gonorrhea who are treated on a duty status are not subject to loss of pay provisions - (AR 35-1440, Section 2, par 1).

3. GONORRHEA - a. Diagnosis in the male.

(1) Acute Gonorrhea. Wherever practicable diagnostic smears should be done in the unit dispensary. If the unit dispensary is not equipped to make a laboratory diagnosis of gonorrhea, smears should be sent to a laboratory. The institution of treatment should not be delayed because of negative smears at the unit dispensary. In these cases additional material should be obtained for later examination at a central laboratory. The detection of gram-negative intracellular diplococci in the urethral exudate, or smears of the centrifuged sediment of the first glass of urine establishes the diagnosis of gonococcal infection. A diagnosis of gonorrhea will not be recorded unless the gonococcus can be demonstrated by smear or culture.

(2) Chronic Gonorrhea (posterior urethritis, prostatitis, seminal vesiculitis, epididymitis, and arthritis). The detection of gram-negative intracellular diplococci in smears of the exudate obtained by digital stripping of the prostate, Cowper's glands, and the urethra, or in smears of the centrifuged sediment of urine passed after stripping the prostate, Cowper's glands, and the urethra, or the demonstration of gonococci in cultures of material so obtained, establishes the diagnosis of gonococcal infection.

b. Diagnosis in the female.

(1) A diagnosis of gonorrhea must not be made in the absence of laboratory confirmation. (Treatment for gonorrhea should be started at once in women who have evidence of this disease, even though laboratory studies are negative or not available. If laboratory facilities are not available, material for subsequent laboratory studies should be obtained before treatment is begun.)

(2) The detection of gram-negative intracellular diplococci in smears of material obtained from any of the following: the urethra, Skene's glands, or the cervix (or from Bartholin's glands or the rectum, when clinical symptoms exist); or positive cultures of such material establishes the diagnosis of gonococcal infection. (Caution: The normal genital bacterial flora and the flora of nonspecific infections may contain organisms that in smear closely resemble gonococci. Therefore, cultural methods should be utilized when possible.)

c. Gonorrheal Ophthalmia. The diagnosis is made on the basis of an acute purulent conjunctivitis, pus containing gonococci, and rapid involvement of the external coats of the eye. (Sulfonamide therapy should be instituted immediately. Prompt ophthalmological consultation is imperative.)

d. Serologic tests for syphilis. All patients with gonorrhea should be given a serologic test for syphilis on admission, a test before being discharged to duty, and if possible a final test two months after discharge.

e. Treatment of uncomplicated acute gonorrhea in males and females.

(1) Local treatment of any kind (injections, irrigations, masseges, instrumentations) is contraindicated in uncomplicated acute gonorrhea.

(2) Treatment should consist of not more than two courses of chemotherapy. A careful inquiry should be made as to previous sulfonamide therapy, recent self-administered chemotherapy for gonorrhea, and for previous drug reactions.

(3) Sulfathiazole and sulfadiazine are each highly efficient, and in the doses recommended cause toxic manifestations very infrequently. Sulfanilamide is far less effective and will not be used.

(a) The recommended dosage for sulfathiazole and sulfadiazine where patients are treated on a duty status is 1 gram (15 grains) four times a day, preferably administered at six hour intervals, for five days.

(b) The recommended dosage where patients are hospitalized is 4 grams (60 grains) initially followed by 1 gram (15 grains) every six hours for five days.

(4) Patients treated on a duty status in whom the gonococcus is present, or who have not made a satisfactory clinical response after the first course of drug, should be transferred to hospital facilities. A second course of drug should then be administered. There should be a lapse of five days between the two courses of medication.

(5) In order to avoid kidney damage it is essential that an adequate urinary output (3000 cc per day) be maintained during sulfonamide medication. Particular attention must be given this point during hot weather.

(6) All treatment beyond one course of sulfonamide will be administered in hospitals.

(7) In the female, hot vaginal douches (under no more than 2 feet of water pressure) afford comfort and promote cleanliness. Acute pelvic inflammatory disease is an indication for bed rest, ice bags to the abdomen, and analgesics. If enemas are necessary, preliminary bathing of the perineum is indicated before inserting the rectal tube in order to avoid inducing gonococcal proctitis.

f. Treatment of sulfonamide-resistant gonorrhea in males and females.

(1) Local treatment in the male (sulfonamide-resistant cases only).

(a) When the infection is confined to the anterior urethra, an anterior urethral injection, once daily, of not more than 6 cc of a 5 percent solution of mild protein silver or 0.5 percent of strong protein silver is advised. (Retain for five minutes). It should be kept in mind that prolonged use of chemicals tends to perpetuate urethral discharge. Discharge caused by over-treatment of this type may be recognized by the presence of many epithelial cells.

(b) All urethral injections are to be administered by a medical officer or a trained attendant; not by the patient.

(c) Stop all local treatment if the patient develops acute sympt of posterior urethral infection, such as urgency, painful or marked frequency of urination, or perineal or rectal pain; and confine treatment to hot Sitz baths. When acute symptoms have subsided, resume anterior urethral injections and continue them until prostatic stroking is begun.

(d) Extremely gentle prostatic stroking should be tried when the second glass of urine has been clear, and the first glass nearly so, for two weeks. If gentle massage is painful or causes a recrudescence of other symptoms, it should not be repeated for one week, or until the symptoms have subsided. If it is not painful and if no recrudescence of symptoms occur, the gland should be gently stripped at three or four day intervals, and smears of the prostatic secretion examined every two weeks. (When prostatic massage is instituted too soon or applied too vigorously it often induces complications and retards cure.)

(e) Infections of Cowper's glands should be searched for in resistant cases. If these glands are palpable, they should be gently kneaded. This can be accomplished at the time prostatic massage is practiced, by placing the thumb against the perineum and gently messaging first one and then the other gland with the index finger.

(f) No instruments of any type should be passed into the urethra.

(2) Local treatment in the female.

(a) See e (7).

(b) The persistence of infection in Skene's glands, Bartholin's glands or the endocervical glands in spite of the use of measures recommended above constitutes a special problem beyond the province of this directive. Such patients require skilled gynecological treatment.

(3) Fever Therapy. In carefully selected cases which persistently fail to respond to other forms of treatment fever therapy may be instituted. The intravenous typhoid saline drip method is recommended.

g. Determination of results in the male (uncomplicated cases).

(1) Clinical response will be used as a guide in determining results of treatment.

(2) Following the cessation of symptoms and the completion of the course of treatment, the patients will be examined for any evidence of gonorrhea at weekly intervals for two weeks. This examination should include history of symptoms, physical inspection, and the two glass test. Smears should be done only on such material as may be obtained from the urethra without manipulation.

h. Determination of results in the male (sulfonamide-resistant cases).

(1) Cure is determined by the inability to demonstrate the gonococcus in any of the urogenital fluids by repeated smears or cultures. Material for these studies should be obtained in the manner previously described in a (2). Two successive negative studies at weekly intervals constitute practical evidence of cure. Tests for cure should be carried out after the patient has returned to duty.

(2) Patients whose symptoms disappear as the result of fever therapy may have tests of cure started on the second day following the treatment.

(3) The passage of sounds will not be used as a test of cure.

i. Determination of cure in the female (uncomplicated cases).

(1) Patients whose symptoms have disappeared as the result of chemotherapy may have tests of cure begun on the third day after disappearance of symptoms.

(2) Cure is determined by:

(a) Absence of tender masses or points of tenderness in the pelvis.

(b) Inability to demonstrate the gonococcus by smears or cultures in material obtained from the urethra, Skene's glands, Bartholin's glands, or the cervix. Such tests should be repeated every two weeks for three months, and, if all are found to be negative, the patient should be discharged from observation. These tests should be carried out on an ambulatory basis.

(c) To obtain material for smears and cultures, massage the urethra, Bartholin's glands, and Skene's glands, obtaining secretion with small cotton-wrapped applicator or a platinum loop. Pass bivalve vaginal speculum without lubricant, expose cervix, clean vagina and cervical canal, squeeze cervix between ends of speculum blades, and obtain expressed fluid on cotton apolicators or platinum loops for smear culture.

j. Determination of cure in the female (sulfonamide-resistant cases).

(1) Patients whose symptoms have disappeared as the result of prolonged artificial fever may have tests of cure begun on the second day after treatment. The tests of cure are the same as those recommended for female patients in uncomplicated gonorrhea.

(2) Patients under local treatment should have smears and cultures done at least every two weeks. If these tests remain consistently negative for three months, and if there are no demonstrable complications, the patient should be discharged from observation.

4. SYPHILIS. a. Diagnosis of syphilis.

(1) It is of the utmost importance that the diagnosis in early syphilis (primary and secondary stages) be established at the earliest practicable moment and that treatment be instituted as soon as the diagnosis is made.

(2) All ulcerative genital lesions, extragenital lesions characterized by indolence, induration, and regional lymphadenopathy, and cases of urethritis accompanied by indolent enlargement of related lymph glands are to be regarded as probable cases of syphilitic infection until this possibility has been excluded by repeated darkfield examinations and repeated serologic tests. In these cases routine serologic tests will be done not less often than:

On admission to sick report.
Second week.
About the end of the first month.
About the end of the second month.

(3) Routine serologic tests will also be made in all cases of gonorrhea at least as often as follows:

On admission to sick report.
Before return to a duty status.
About the end of the second month.

(4) Antisyphilitic treatment will not be started until the diagnosis of syphilis is definitely established. The demonstration of the Treponema pallidum by darkfield examination is conclusive as to the necessity for the immediate institution of treatment. A persistent completely positive serology even in the absence of confirmatory clinical signs or a history of infection is also diagnostic of syphilis, and usually is an indication for treatment. Positive serologic tests on a single specimen should never be made the basis of treatment in the absence of unmistakable clinical evidence of syphilis. A completely positive precipitation or complement-fixation test (Kahn or Wassermann) confirmed by a positive complement-fixation test (Wassermann) on a second specimen indicates syphilis provided no negative reactions have been obtained. Acute infections, particularly malaria and possibly vaccination procedures, are believed to give rise at times to transient false positive serologic tests. The presence of these complicating factors should be excluded before making a definite diagnosis of latent syphilis. In the event of incompletely positive or contradictory serologic reactions the test should be repeated until the possibility of technical error is excluded.

b. Treatment of Syphilis.

(1) General principles of treatment.

(a) No treatment is to be given for suspected early syphilis until the diagnosis is made either by darkfield examination or confirmed serologic tests. No therapeutic tests are to be used.

(b) Arsenoxide (mapharsen) will be used as the standard arsenical. Neoarsphenamine or other arsenicals cannot be substituted in the treatment schedule outlined in table 1.

(c) If it is necessary to use neoarsphenamine, because of the nonavailability of arsenoxide, the former drug should be given only at weekly intervals in courses of not more than eight consecutive weekly doses.

(d) Trypersamide and fever therapy are not to be used outside of a hospital.

(e) Each treatment is to be recorded on the syphilis register of the patient or if for any reason a syphilis register is not available, a written record is to be kept and transferred to the standard

form as soon as possible. Each entry will include date, drug, dose, and reaction.

(f) It cannot be too strongly emphasized that regularity of treatment schedule without long or short time variations or lapses is critically important to both infection control and cure. Every effort must be made to impress this fact on enlisted men and officers as well as medical personnel.

(g) Emphasis should also be placed on the completion by each patient of the full schedule of treatment in the time called for regardless of early serologic reversal.

(2) Treatment of early and latent syphilis.

(a) In view of recent advances in knowledge regarding the toxicity and therapeutic efficiency of arsenoxide, the following recommendations regarding the treatment of early and latent syphilis have been prepared by the Subcommittee on Venereal Diseases of the National Research Council and approved by The Surgeon General.

(b) Early (primary and secondary) and latent syphilis of any duration should be treated by an identical treatment system. This treatment may be completed within twenty-six weeks. (See Treatment Schedule - Table I.)

(c) Patients with syphilis, early or latent, should as a rule, be hospitalized initially to the end that a careful examination may be made and antisyphilitic treatment started. The period of hospitalization ordinarily need not be prolonged more than five to seven days. Thereafter, treatment should be continued by unit medical officers; or, in areas where concentration of patients is feasible, in centralized ambulatory clinics established in hospitals. Whenever possible and to minimize loss of time from duty, treatment of non-hospitalized patients should be given after duty hours.

(d) At reception centers vaccinations and other procedures incident to induction may be carried out, during the initial period of hospitalization for syphilis, by local arrangements between the commanding officers of the reception center and the station hospital.

(e) Table I - Treatment schedule, early and latent syphilis.

Week		
1)		
2)		
3)		Bismuth subsalicylate
4)	Arsenoxide (mapharsen)	intramuscularly once
5)	intravenously twice	weekly, 5 doses
6)	weekly, total	
7)	20 injections.	
8)		Omit bismuth - 5 weeks
9)		
10)		
11		
12		
13	Omit arsenoxide	Bismuth subsalicylate -
14	(mapharsen) - 6 weeks	intramuscularly
15		Once weekly - 6 doses
16		

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Week		
17)		(
18)		(Omit bismuth - 5 weeks.
19)		(
20)	Arsenoxide (mapharsen)	(
21)	as in first course, twice	(
22)	weekly total 20 injections.	(
23)		(Bismuth subsalicylate
24)		(intramuscularly once
25)		(weekly, 5 doses.
26)		(

Arsenoxide (mapharsen) dosage: Adjusted approximately to body weight; average dose 60 mg., minimum dose 50 mg., maximum 70 mg.

Bismuth subsalicylate in oil dosage: The standard dose is 0.2 gm. of bismuth subsalicylate intramuscularly (not 0.2 gm. of elemental bismuth metal).

(3) Technical suggestions.

(a) Discard discolored drugs and solutions and damaged ampules.

(b) Dissolve arsenoxide in sterile distilled water in the proportion of 10 mg. of drug per 2 cc of water; a dose of 60 mg. will then be contained in 12 cc of solution, 50 mg. in 10 cc, and 70 mg. in 14 cc.

(c) Shake and aerate arsenoxide; do not shake or aerate the other arsenicals.

(d) Inject arsenoxide rapidly to avoid thrombosis; there is little danger of speed shock or nitritoid crisis. Other arsenicals should be injected slowly to avoid speed shock or nitritoid crisis.

(e) Thoroughly shake oily suspensions.

(f) Attempt aspiration after insertion of needle before making any injection, especially intramuscularly.

(g) Inject bismuth intramuscularly into upper outer quadrant of buttock. Alternate sides.

(h) Massage firmly after withdrawing needle from buttock and have patient prolong massage to three minutes.

(i) Advise rest if practicable after arsenicals.

(j) Warn patient to report his reactions.

(k) Watch mouth and gums for bismuth stomatitis.

(4) Treatment is to be stopped and the patient hospitalized if the following appear:

(a) An itchy dermatitis of the face or flexures.

(b) Jaundice.

(c) Petechial or other hemorrhagic lesions.

(d) Evidence of cerebral injury, even though slight.

(5) General anti-reaction therapy.

(a) Epinephrin solution 1:1000, ½ - 1 cc subcutaneously for speed shock or nitritoid crisis.

(b) Glucose 500 cc 5 percent solution intravenously supplemented with thiamine chloride 5 mgm., for jaundice. (See notes on

the treatment of Jaundice, SGO Circular Letter No. 55, June 11, 1942)

(c) Vitamin B complex is recommended in suspected liver damage.

(d) In cerebral vascular accidents measures to be considered are venesection, and hypertonic saline solution intravenously (500cc of a 1.5 percent solution).

(e) In blood dyscrasias, transfusions.

(f) Sodium thiosulphate for any type of treatment reaction is considered valueless.

(6) Serologic control of treatment. In patients with early syphilis a serologic test will be done at the beginning and end of the schedule of treatment outlined in table I; but treatment may be stopped whether the serologic test for syphilis (STS) is positive or negative. After the completion of treatment, STS should be repeated three and six months later. If the test is negative after six months, the case may be classified as "Result Satisfactory" and the Syphilis Register may be closed. If the test is positive after six months, the patient should be referred to a station or general hospital.

In patients with latent syphilis the STS should be repeated at the completion of treatment outlined in table I, but the Syphilis Register may be closed when this treatment is completed, regardless of the result of serologic test.

(7) Spinal fluid examination should be performed in a hospital in patients with early syphilis at the end of the course of treatment outlined in table I, or as soon as possible thereafter; but in any event before the Syphilis Register is closed. In apparent latent syphilis, spinal puncture should be performed in a hospital before treatment or as soon as possible thereafter, but in any event before the Syphilis Register is closed.

(8) Control of relapse and infectiousness.

(a) Early syphilis is to be regarded as infectious until the second injection of arsenoxide has been given. Cases should be returned to duty immediately following the second injection.

(b) Physical inspection of skin (including palms and soles), mucosae, anus, and genitalia should be performed as often as circumstances permit during treatment and at each probationary inspection.

(c) The involution of the chancre or secondaries should be watched to detect treatment-resistant cases.

(d) Patients should be warned to look for and report mouth, skin, and genital lesions. Darkfield examination is of great help in recognizing relapsing lesions of the skin, mucosa, and genitalia.

(9) Complications or relapse. In the event of any complication of treatment (serious treatment reactions) or any evidence of relapse, clinical or serologic, the patient should be at once transferred to a station or general hospital.

(10) Cardiovascular, visceral, and neurosyphilis require special treatment in hospital. For additional details see standard texts.

(11) Treatment of precocious late syphilis (tertiarism). As soon as possible precocious late syphilis (early gummatous and rupial lesions and bone lesions) should be hospitalized for combined fever and arsenical therapy.

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(12) Treatment of congenital syphilis. On recognition or on appearance of active lesions, congenital syphilis should be treated on the schedule for early and latent syphilis.

(13) Separation from the service. When practicable, the physical status of every patient with syphilis, whether the disease was acquired before or after induction into the service, will be completely re-evaluated when discharge from the Army is contemplated.

c. Diagnostic nomenclature for syphilis in the Army.

Syphilis, primary.

Syphilis, secondary.

Syphilis, early latent (less than four years since infection).
Spinal fluid negative.
Spinal fluid not performed (diagnosis tentative).

Syphilis, late latent (four or more years since infection).
Spinal fluid negative.
Spinal fluid not performed (diagnosis tentative).

Syphilis, tertiary - otherwise unclassified.
Mucocutaneous.
Osseous.
Ocular (except optic atrophy).
Visceral (except cardiovascular).
Cardiovascular - other.
Aneurysm (saccular).
Aortic regurgitation (insufficiency).
Aortitis (uncomplicated).
Neurosyphilis - otherwise unclassified.
Asymptomatic.
Acute syphilitic meningitis.
Diffuse meningovascular.
Optic atrophy
Tabes dorsalis.
Taboparesis
Psychosis with syphilitic meningoencephalitis (general paresis).
Psychosis with neurosyphilis other than puresis or taboparesis.
Syphilis, type undetermined - to include cases in which accurate diagnosis has not been made.

Syphilis, congenital - include all manifestations.

Arsenical poisoning.
Bismuth poisoning.
Iodine poisoning.

Mercury poisoning.
Spinal puncture for diagnosis or progress.
Special therapeutic practices -
Fever therapy - malaria.
artificial.

(1) Definition of terms and explanations of their use. Primary. To include those cases presenting the primary lesion of syphilis (the chancre), which have not yet developed secondary manifestation. This diagnosis must be confirmed by darkfield examination, serologic test of the blood, or both. If blood serologic test is negative, the diagnosis of primary syphilis is not permissible without the demonstration of T. pallidum by darkfield.

Secondary. To include only those cases of early syphilis which show one or more of the manifestations of systemic dissemination of the spirochete; for example, generalized enlargement of lymph glands, cutaneous eruption, mucous patches, condylomata lata, patchy alopecia, laryngitis, bone pains, febrile reaction, and so forth. The chancre may or may not be present and if present may be in any stage of evolution. In early secondary cases the manifestations of systemic spirochetal dissemination are increasing, have attained their maximum, or are waning. This diagnosis must be confirmed by darkfield examination, serologic test, or both.

In early secondary syphilis and in addition to the manifestations listed above, ocular or neurologic complications (iritis, neuroretinitis, acute syphilitic meningitis) should be specially recorded as: "Syphilis, secondary, manifested by....."

Latent. Secondary symptoms have subsided and the active manifestations of late syphilis have not yet supervened. There are no evidences of syphilis other than a positive serologic test of the blood. Cases will be classified as: "Latent (early or late) - spinal fluid negative" or "Latent (early or late) - spinal fluid not performed (diagnosis tentative)." The date of the negative examination of the spinal fluid will be stated in all cases.

Tertiary. This classification is to be limited to cases that show active lesions of late syphilis. The lesion may be a gumma, or it may be a diffuse process and may involve any organ or tissue of the body. The majority of all patients with tertiary syphilis will fall within six categories:

Mucocutaneous. Late syphilitic gummatous lesions of skin or mucous membrane.

Osseous. Periostitis, osteomyelitis, arthritis, synovitis.

Ocular. Iritis, uveitis, keratoiritis, keratitis, choroiditis, but not including optic atrophy.

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Visceral. Hepatic, gastric, etc., but not including cardiovascular.

Cardiovascular. To include all lesions of the heart and great vessels. Classify as follows:

Aneurysm (saccular). Do not use for a fusiform dilation of the aorta. Specify artery involved.

Aortic regurgitation (aortic insufficiency). Specify whether with or without cardiac decompensation.

Aortitis, uncomplicated. To be used only for those patients with symptoms and physical or x-ray signs of syphilitic aortic involvement in the absence of aneurysmal sacculation or aortic regurgitation.

Neurosyphilis. To include all cases with involvement of the central nervous system, classified as follows:

Asymptomatic. To be used only for those patients with early or late syphilis who have no symptoms or detectable physical signs of central nervous system involvement, and in whom the diagnosis is based on the routine finding of abnormalities in the spinal fluid.

Acute syphilitic meningitis. Usually occurs within the first two years of the disease, most commonly as a relapse phenomenon (neurorecurrence), manifested by the usual signs of low grade meningeal involvement, with or without cranial nerve palsies.

Diffuse meningovascular. This is a catch basket category to include all patients with neurosyphilis who do not fit into other diagnostic categories enumerated. Manifestations to be stated in each instance.

Optic atrophy. Primary or secondary.

Tabes dorsalis. Manifestations to be stated.

Taboparesis. To be used only in patients with definite psychiatric signs of paresis complicated by definite clinically demonstrable evidence of damage to the posterior columns of the spinal cord.

Psychosis with syphilitic meningo-encephalitis (general paresis). To be limited to cases which show psychic changes in addition to neurologic signs and the characteristic changes in the spinal fluid. Cases with paretic type spinal fluid but without psychic changes will be reported as: "Syphilis, diffuse meningovascular, manifested by....."

Psychosis with neurosyphilis. To include neurosyphilis with psychosis other than cases of paresis and taboparesis.

If tertiary manifestations occur which do not fit into one of these categories, diagnose as:

"Syphilis, tertiary, otherwise unclassified" - Specify.

Type undetermined. To include cases in which accurate diagnosis has not been made. Every effort should be made to make a complete examination and proper diagnostic classification in all cases.

Congenital. To be limited to cases that show definite evidence of the existence or former existence of the characteristic changes of congenital syphilis, such as interstitial keratitis, Hutchinson's teeth, saber shins and other bone changes, saddle nose, eighth nerve deafness, and so forth. The congenital origin of syphilis is not to be assumed merely because the time and the circumstances of the infection cannot be ascertained and there is no scar of a primary lesion.

The suggested terms for various drug poisonings are intelligible as they stand.

Spinal puncture for diagnosis or progress. This should be used in all cases (syphilitic or otherwise) routinely hospitalized for purpose of a spinal puncture.

Special therapeutic practices. This diagnostic grouping has been included for it seemed desirable to indicate special therapeutic practices which necessitate hospitalization.

5. CHANCROIDAL INFECTION. a. Definition. Chancroid is a venereal disease transmitted only by direct contact and characterized by single or multiple genital ulcers. The latter possess irregular crateriform margins, are usually not indurated, and exhibit a tendency toward the formation of complicating suppurating inguinal adenitis. The incubation period is usually three to fourteen days.

b. Diagnosis. It is important to rule out the presence of mixed syphilitic and chancroidal infection. For this purpose at least three darkfield examinations should be made on successive days; a blood serologic test for syphilis should be made on admission to the hospital, during the second week, and at monthly intervals for two months following healing of the chancroidal lesions. Laboratory tests for the diagnosis of chancroid (Ito-Reenstierna skin test or the staining or cultural isolation of the Ducrey bacillus) are not recommended.

c. Treatment.

(1) Chemotherapy.

(a) Local. Accessible lesions should be cleansed with soap and water and dried. They should then be completely covered with powdered sulfanilamide and a loose, dry dressing applied. This should be repeated at daily intervals until the lesion heals. Other local medication is not recommended. In patients with tight phimosis and underlying ulcerative lesions, the phimotic preputial cavity should be irrigated twice daily with 1-5000 potassium permanganate solution.

(b) Systemic. Administer sulfathiazole or sulfadiazine 1 gram (15 grains) four times a day for five days. Sulfanilamide 1 gram (15 grains) three times a day for five days, may be utilized instead of sulfathiazole or sulfadiazine, but is less well tolerated.

Practically all chancroidal infections will respond to the above routine. In fact, if the lesion does not heal, doubt is cast on the correctness of the diagnosis of chancroid, and the patient should be restudied from the diagnostic standpoint, and, if necessary, treated surgically.

(2) Surgical therapy.

(a) Surgical procedure designed to relieve phimosis or paraphimosis should be resorted to only on the basis of sound clinical judgment.

(b) Chancroidal bubo. Most of these will subside with systemic sulfonamide therapy. If extensive suppuration is present, the bubo may be opened by a small incision, the pus aspirated, and the cavity packed with sulfanilamide powder.

6. LYMPHOGRANULOMA VENEREUM. a. Definition. This disease concept includes the conditions formerly known as lymphogranuloma inguinale, lymphopathia venereum, climatic bubo, esthiomene, and inflammatory rectal stricture.

b. Etiology. A filtrable virus, probably multiple strains.

c. Geographic distribution. World-wide.

d. Clinical picture. A systemic disease of the lymphatic system, usually originating in a trivial and transitory lesion of the penis, vulva, vagina, or rectum, which frequently escapes the patient's notice.

The invasion of the lymphatic glands usually occurs from ten to thirty days after infection, occasionally is delayed months. Inguinal adenitis is often bilateral and occasionally subsides without suppuration. During this stage, constitutional symptoms may be observed. Lymph nodes may fuse to skin, resulting in multiple areas of softening, followed by numerous fistulae. Extensive scarring accompanies healing. The anorectal syndrome usually is found only in the female, and is characterized by rectal pain, discharge of blood and pus from the anus, a tendency toward extreme chronicity, and the production of rectal stricture.

e. Differential diagnosis. Differentiate from malignant tumors, Hodgin's disease, tularemia, tuberculosis, pyogenic infections, chancroidal bubo, and syphilis. Mixed venereal infections should be ruled out by the darkfield examination of the material from genital lesions for the causative organism of syphilis. Frequent serologic examinations should be continued for at least two months after the disappearance of the lymphatic symptoms.

f. Laboratory tests in lymphogranuloma venereum.

(1) Only one diagnostic procedure for lymphogranuloma venereum, the intradermal test of Frei, has as yet come into general use. Other methods used in confirming the diagnosis are either impractical (animal inoculation, artificial cultivation of the virus), nonspecific (alterations in serum protein), or their value not yet established (complement fixation).

(2) Frei antigens.

(a) Chick embryo antigen. This is the preparation recommended for Frei testing. Nonspecific reactions occur, so that simultaneous inoculation of control material must always be made.

(b) Human bubo-pus antigen. Pus is obtained from an unruptured bubo from an acute case of lymphogranuloma venereum. This pus must be diluted 1:5 or 1:10, cultured for sterility, heated for 1-2 hours on consecutive days at 56°C., following which a preservative is added. This material is placed in sterile rubber stoppered vials and is then tested upon known positive cases and known negative controls to determine its potency. Pus from different patients differs in antigenic potency. When human bubo-pus antigens are locally available they may be used, but are not generally recommended for use by the armed forces because of the uncertainty of sources of supply and the variability of antigens.

(c) Mouse brain antigen. This preparation is commercially available. However, it is not recommended for use because it yields a high proportion of nonspecific results.

(3) The Frei test.

(a) Method of use of chick-embryo antigen. This preparation is supplied in two ampules, one of which is the virus containing antigen, the other the nonvirus-containing yolk sac control. For use in Frei testing, 0.1 cc. of antigen and 0.1 cc. of control material are injected intradermally into different areas on the flexor surface of the forearm. The areas chosen should be at least 4 cm. apart, or the virus antigen and control may be injected in opposite forearms. Separate tuberculin syringes and 26 guage needles should be used.

(b) Reading of results. The injected areas must be inspected forty-eight and seventy-two hours later. A positive reaction consists in a more or less indurated papule 7 mm. or more in diameter (disregarding the surrounding zone of erythema), with or without central vesiculation or ulceration. A doubtful reaction consists in a papule roughly from 5 to 7 mm. in diameter, without central ulceration or vesiculation. A negative reaction consists in no change at the injected site, or erythema only, or a papule less than 5 mm. in diameter. If the control material likewise yields a positive papule (7mm. or over), the Frei test should be repeated with human bubo-pus antigen if it is available. The test may be read as positive or doubtful if the papular reaction described occurs only with the virus-containing antigen, the control remaining negative.

(4) Interpretation of results of Frei test. The Frei test is of greatest value in patients with the acute bubonic form of lymphogranuloma venereum where a negative test may be observed to develop gradually into a

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positive one.

There is reason to believe that in certain instances there are nonspecific cross-reactions in the presence of other venereal diseases, e.g., chancroid, granuloma inguinale, syphilis; and a positive Frei test with any antigen must be interpreted with caution when suspected lymphogranuloma venereum coexists with these diseases.

Moreover, a positive Frei test cannot be relied upon absolutely to establish the lymphogranulomatous nature of any clinical condition, since it is know that, in untreated infections with lymphogranuloma venereum, skin sensitivity persists for many years, probably for a life time. A positive test may, therefore, mean only that the patient has had lymphogranuloma venereum at some time in the past, rather than that his presenting symptoms are caused by this disease.

In short, the Frei test is of most diagnostic value when it is negative, since under these circumstances lymphogranuloma venereum, past or present, may be excluded with reasonable certainty. A diagnosis of lymphogranuloma venereum should not be made on the basis of a positive Frei test in the absence of clinical signs.

g. Treatment.

(1) Local. Patients with acute inguinal adenitis should be hospitalized whenever possible. The fluctuant nodes may be aspirated, but incision and drainage should be delayed until the effect of chemotherapy has been observed. Radical excision is inadvisable because of the risk of elephantiasis of the scrotum or vulva.

(2) Chemotherapy.

(a) The value of the sulfonamide compounds in lymphogranuloma venereum has not been definitely established, but preliminary reports indicate thatthey may be effective. Sulfathiazole and sulfadiazine are probably the drugs of choice, although sulfanilamide may be used.

1. Sulfathiazole or sulfadiazine should be administered in doses of 1 gram (15 grains) four times daily for five days. It may be necessary to prolong this medication to ten to fourteen days, in which case the dose should be reduced to 0.5 grams four times a day.

2. Sulfanilamide, if used, should be administered in doses of 1 gram (15 grains) three times a day for five days, followed by a reduction to 0.5 - 0.75 grams three times daily for an additional five to seven days.

(b) The acute anorectal syndrome should be treated in the same manner as the inguinal manifestations. Stricture or other late complications should receive special consideration.

7. GRANULOMA INGUINALE. a. Definition. Granuloma inguinale is a chronic disease due to infection with a leishmania-like organism. It involves primarily skin and mucous membranes, rarely with coincident adenopathy; it is characterized by vivid-hued, shining verrucous, vegetating nodules of granulating tissue with a hemorrhagic surface surrounded by a thin, easily excoriated epidermis. The condition spreads by peripheral extension and

autoinfection, often involving the entire genital area. It may involve large adjacent areas of the lower abdomen and thighs. The lesions show little or no tendency to spontaneous healing and may persist for months or years.

b. Diagnosis. The clinical appearance of a chronic process involving the groin and genital areas with little involvement of the lymph nodes is characteristic of the disease. The finding of Donovan bodies by Wright stain in deep tissue scrapings or biopsy of a peripheral area of diseased tissue (including a section of normal adjacent skin) confirms the diagnosis.

Lymphogranuloma venereum, chancroid infection, and syphilis should be considered in the differential diagnosis, and appropriate diagnostic tests should be performed.

c. Treatment.

(1) Tartar emetic administered intravenously in doses of 0.03 to 0.12 grams. Patient should remain recumbent for one hour following an injection. Drug intolerance is indicated by nausea, vomiting, cough, tachycardia, hypotension. Initiate treatment with 3 cc. of a freshly prepared 1-percent solution. Each subsequent dose, freshly prepared, should be increased 3cc. if tolerated until the maximum dose, 12 cc., is attained. The maximum tolerated dose is given three times weekly for fifteen treatments.

(2) Fuadin 1-3 cc. (0.06-0.18 grams) or anthiomaline 1-3 cc. (0.06-0.18 grams) (both of these are complex antimony compounds) may be given intramuscularly two or three times weekly for twenty to twenty five doses when the patient has difficulty in taking tartar emetic, or when the lesions have not improved satisfactorily under the former drug.

(3) Courses of tartar emetic, fuadin, or anthiomaline, separated by "rest periods" of two weeks, should be continued for at least four months after all lesions are completely healed, otherwise relapse is almost certain to occur.

(4) Local treatment of the lesions may be limited to daily dressings; or surgical excision of the entire area may be necessary. Large areas may be treated with solid carbon dioxide pencils. Deep x-ray therapy in expert hands has yielded promising results.

For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon

6 April 1943

CIRCULAR LETTER NO. 9

DYSENTERY

1. Bacillary and amoebic dysentery are prevalent in North Africa, and the latter is hyperendemic in the Fez-Meknes area. These diseases rarely occur except as isolated instances if a proper sanitary discipline is maintained. For this reason it is highly important that the methods described for the control of intestinal diseases in F.M. 21-10 Paragraphs 14-44 be instituted wherever it is possible to do so. It is also very important that carriers of dysentery bacilli or amoebic cysts be excluded from food handling of any type. As amoebic dysentery is generally spread through the agency of contaminated food or water, the necessity of utilizing food and water from approved sources cannot be emphasized too highly. A strict personal sanitary discipline will be necessary if control methods are to be successful. Medical officers should by practice and precept set an example in the maintenance of the type of personal sanitary discipline which is desirable in NATOUSA.

2. Diagnosis of Dysentery. Every effort should be made to identify the etiological agent of dysentery by bacteriological or microscopic methods, because the institution of the proper methods of specific therapy depends upon an accurate etiological diagnosis. A rough diagnosis in the field between bacillary and amoebic dysentery can be made (Stitt's Tropical Medicine, 6th Edition, 1942, P. 506-507) from a careful examination both macroscopic and microscopic of the stools. "In amoebic dysentery the stools are often fluid, relatively copious and contain fecal material and varying amounts of fresh and altered blood, which may give a dark brownish or reddish color, and there may be much blood streaked or brownish mucus. This contrasts with the scanty, watery, non-fecal passages containing masses of whitish mucus, flecked with bright red blood in the bacillary type of dysentery. Microscopically the amoebic stools show mucus and numerous red blood cells, often clumped and degenerated, and very few pus cells or phagocytic cells, which are numerous in the bacillary type. The cells which are present mostly show cytolysis and consist of scanty ragged cytoplasm surrounding pyknotic nuclei."

b. General Treatment of Bacillary Dysentery. Mild or moderately severe cases without dehydration or toxemia should be put at complete rest in bed. The fluid intake should be 3000 cc or more each 24 hours, and the diet should be fluid or free from residue. Acute fulminant or severe cases should be put completely at rest in bed. The intake of fluids should be augmented by the intravenous administration of 5% glucose in physiological saline, and thiamin chloride 2 milligrams, nicotinic acid amide 15 milligrams

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and ascorbic acid 50 milligrams should be given by the oral or parenteral routes. It is important in severely ill patients to administer sufficient fluid to maintain a daily urinary output of 1000 cc or more.

c. Specific Chemotherapy. Sulfaguanidine is the drug of choice in the treatment of all forms of bacillary dysentery with the exception of that produced by Sonne's bacillus. Sulfaguanidine - the initial dose consists of 7 grams, maintenance dose is 3.5 grams administered every 4 hours day and night until the number of stools per day is reduced to 5 or less; maintenance should then be shifted to 3.5 grams every 6 hours day and night until the stools have been normal for 4 days. If improvement does not occur in patients within 48 hours after the beginning of sulfaguanidine therapy, sulfaguanidine should be stopped and sulfathiazole given, 1 gram every 4 hours day and night. This dosage should be maintained for at least one week, but if no improvement is noted within that time sulfathiazole should be stopped as the dysentery is probably not one of bacillary origin. However, if improvement should occur within this time, dose of sulfathiazole should be decreased to 1 gram three times a day and continued until the stools have been normal for 96 hours. If sulfaguanidine is not available for the treatment of bacillary dysentery or if Sonne's bacillus is the causative agent, sulfathiazole or sulfadiazine should be used, the initial dose being 4 grams, maintenance dose 1 gram every 4 hours day and night until the stools number five or less per day, etc. Chronic bacillary dysentery is treated in the same manner as acute cases, but the large initial dose should be omitted. Carriers should be treated as chronic cases for a period of 7 to 10 days.

d. General Treatment of Amoebic Dysentery. Patients suffering from the acute or chronic phase of amoebic dysentery must be kept in bed during the period of emetine therapy if cardiac disturbances and damage are to be avoided. Acute cases should be given a liquid diet (broths at first, later add milk, eggs, custard, etc.) until initial symptoms subside, following which a low residue diet should be given. Chronic cases should be given a soft, low residue diet. Therapy should be controlled by sigmoidoscopic examinations, whenever such procedures are possible in order that an accurate estimation of the effects of treatment may be made.

e. Specific Therapy. While specific types of chemotherapy are available for the treatment of amoebic dysentery, it must be remembered that this disease shows a tendency to relapse and therefore treatment should be individualized to suit the needs of the patient. The following therapeutic suggestions are to serve as a general guide to medical officers. The initial treatment of acute and chronic cases of amoebic dysentery is the same. Emetine hydrochloride in doses of 0.03 grams (1/2 grain) twice a day or 0.06 grams (1 grain) once a day should be given by the intramuscular route for 10 days. Simultaneously carbarsone in doses of 0.25 grams twice a day or chiniofon 1 gram three times a day, administered by mouth, should be given for 10 days. Then if symptoms have abated, after a two weeks rest period, the course of carbarsone or chiniofon should be repeated regardless of whether the stools have become negative following the first course of treatment. Then after a week the stools should be examined on three consecutive days for the presence of amoebae or cysts and once a week thereafter for four weeks, if such is possible.

Small retention enemas of 1% carbarsone in 2% sodium bicarbonate solution or 1% chiniofon in sterile water, repeated daily may be used as adjunct therapy in patients who show an extensive ulceration of the colon or rectum.

f. Treatment of Amoebic Carriers Without Dysentery. These carriers should be treated with carbarsone or chinicfon in the doses recommended for the treatment of acute or chronic amoebic dysentery. In these patients stool examination for cysts should be started 7 days after therapy has been discontinued and should be carried out on three consecutive days and if possible once a week for 4 weeks thereafter. If cysts are found, the course of treatment should be repeated.

g. The Treatment of Amoebic Hepatitis Without Liver Abscess and of Amoebic Abscess of the Liver. The possibility that these complications exist must always be borne in mind in all instances of hepatic enlargement, or of obscure lesions affecting the diaphragm or the lower lobe of the right lung. The treatment of patients suffering from either of these diseases must be individualized. However, emetine hydrochloride therapy should be used in conjunction with other types of treatment.

For the Surgeon:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon

5 April 1943

CIRCULAR LETTER #8

SUBJECT: The Treatment of Burns.

1. Classification.

a. Depth of Burn. Principles determining local treatment are based on two depths of injury of the skin:

(1) Partial thickness skin loss (1st and 2d degree)

(2) Full thickness (3d degree)

A partial thickness burn may be converted into full thickness loss of skin by infection or by the application of strong chemical coagulants or antiseptics.

b. Surface Area of Burn. The severity of shock and consequently the measures necessary for its prevention and correction are determined more by the extent (surface area) of the burn than by its depth. The application of Berkow's formula provides a convenient estimation of the burned area in terms of percentage of the total surface area of the body.

Berkow Formula:

Head		6.0%
Both arms and forearms	13.5%	
Both hands	4.5%	
Total		18.0%
Trunk: Anterior surface	20.0%	
Posterior surface	18.0%	
Total		38.0%
Both Thighs	19.0%	
Both Legs	13.6%	
Both feet	6.3%	
Total		38.9%

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In describing a burn both the depth and the surface area is recorded. For statistical purposes it is also important to record the causative agent, e.g., gasoline, flame, tracer bullet, steam, etc.

2. First Aid. A burn is treated as a fresh open wound, the basic principle being prevention of contamination. Infection is prevented by avoiding seeding the surface with bacteria from the noses and throats of those taking care of the patient, contact with blankets, careless dressing technique, and exposure by non-occlusive bandaging and dressings.

Burned clothes are left undisturbed, and exposed areas covered with shell dressings or sterile gauze held in place by firm occlusive bandaging. Morphia is given to relieve pain. Flash burns in enclosed spaces such as tanks may cause pulmonary damage and anoxia. Under such circumstances the respiratory depressant effect of large doses of morphia may be dangerous.

Plasma therapy need not be instituted in the field if a Clearing Station or Hospital for definitive treatment can be reached in approximately two hours. When a longer period may elapse before a center for definitive treatment can be reached, plasma infusions should be given to extensive cases. A first dressing of boric ointment or vaseline gauze is applied without attempt at preliminary cleansing.

A booster dose of tetanus toxoid is recommended.

3. Definitive Treatment. (At a Clearing Station or Hospital where full aseptic surgical technique can be observed).

a. Treatment of Shock. Shock should be anticipated and prevented rather than combatted. To anticipate shock an estimate of the area of the burn is informative. For each 10% of the body surface involved by a blistering burn, 500 cc of plasma will be required.

When shock is already present, blood-pressure readings and pulse rate provide indications for plasma dosage. With a low blood-pressure, plasma is given rapidly--at a rate of 100 cc per minute--until 1000 to 1500 cc have been given. Plasma infusion is then continued at a slower rate. In severe cases 4000 to 5000 cc may be required during the initial 48 hour period.

The degree of hemoconcentration is also a useful guide to shock treatment. 50 cc of plasma is indicated for every point that the concentration of hemoglobin exceeds the normal of 100%. Or, 100 cc of plasma for every point that the hematocrit determination exceeds the normal of 45.

These "rules of thumb" guides to therapy based on percentage of surface area and hemoconcentration are approximations, and will be found to vary with the man's condition before injury (dehydration, fatigue), environmental temperatures, particular body regions burned, associated wounds and other variables.

b. Local Treatment. Military conditions are distinctly unfavorable for the treatment of burns by coagulants. Sealing of the surface by an eschar is comparable to primary suture of a wound. The use of tannic acid and silver nitrate, and the use of gentian violet or triple dye cannot be recommended. This also holds for the use of jellies and ointments containing these ingredients either for first aid or definitive treatment.

A possible exception may be noted. With large area, partial thickness burns of the trunk when the casualty arrives for definitive treatment within 12 hours of injury, tannic acid may be a preferable form of treatment. The eschar should be formed by the rapid method, i.e. with the addition of silver nitrate, as prolonged methods of tanning may produce liver damage.

An essential step in the ritual of the coagulant treatment of burns was an elaborate cleansing of the surface. With the use of an "open" method of treatment cleansing need be less meticulous or if circumstances demand, dispensed with altogether. When cleansing of the burn surface is carried out it is done with all of the aseptic precautions of a major operation. Every person in the operating room including the patient is masked. Cleansing is done with extreme gentleness. The use of irritant soaps, detergents and antiseptics is avoided; cotton swabs replace scrubbing brushes and only a limited part of the burn is exposed to the air at any one time. The cleansing should be so gentle that anaesthesia other than preliminary sedation with morphia or barbiturates is not required. Blebs may be left intact or aspirated.

(1) Boric ointment or vaseline. Fine mesh gauze (see 8) impregnated with boric ointment or vaseline is applied to the surface. This is covered with a bulky dressing of sterile gauze or sterile mechanic's waste. A firm bandage exerting an even pressure is then applied. In burns of the forearm or leg the bandage starts at the digits and is carried upward. Fingers are separated and the hand bandaged in the position of function in burns of the hand. Remove finger rings. Burns of the face may be similarly treated, padding behind the external ears and carefully noting injury to the eyes before bandaging. Sodium sulamyd solution or an eye ointment is recommended for the eyes, with instillation of a mydriatic if corneal injury is present. Sulfadiazine ointment as issued is not suitable for the eyes because the ointment base is irritating.

As a further protection, extremities should be splinted or may be enclosed in a plaster of Paris casing particularly during evacuation. Plaster casings are split immediately to allow for swelling. Smearing the edges of the plaster with boric ointment is said to prevent maggot infestation.

When a boric ointment or vaseline dressing is used on extensive burns, oral or intravenous sulfonamide (preferably sulfadiazine) is immediately instituted and continued.

(2) Other ointments and emulsions. The use of cod-liver oil ointment appears impractical in this theater because of limitation of supply by W.P.B. order; rapid deterioration in hot weather, and its attraction for flies.

(3) Local application of sulfonamides

(a) Sulfadiazine ointment may replace the bland ointments particularly in minor burns when it is not necessary to institute an intensive course of chemotherapy.

(b) Sulfanilamide in crystalline form frosted on the surface of the burn is rapidly absorbed, and if applied liberally to a large area may produce serious or fatal overdosage. No more than 10 grams can be used at one application. No supplemental chemotherapy should be given by other routes. Repeated application requires dressings at four day intervals. The absorption rate and concentration established at the surface of the burn is immediately modified by a vaseline gauze covering.

(c) Water soluble base ointments and jellies containing sulfonamides evaporate rapidly and cause the dressing to adhere to the surface.

4. Continuing General Treatment.

When shock has been adequately controlled with plasma, saline or glucose saline may be used to supplement the oral intake and maintain fluid balance. Fluids are given to establish a urinary output of 1200 cc in 24 hours. Urinary output should be measured and charted. After any initial chloride deficiency has been corrected, intravenous infusions should be glucose in water.

Severely burned patients may be expected to develop a secondary anemia after 2 to 4 days. This may require whole blood transfusions as well as iron therapy. Repeated whole blood transfusions are required in extensive full thickness burns. No more than one or two transfusions should be given from "O" (universal) type if the patient is another type. Select a donor of the same group.

High protein diet and supplemental vitamin therapy are recommended for full thickness burns.

5. Continuing Local Treatment.

Change of dressings becomes necessary when the outer layers become soaked with exudation despite reinforcement, or when the clinical course suggests infection. The general condition of the patient, comfort, appetite, and mental clarity are as reliable indices of infection as the temperature chart which may remain elevated for some days even with clean healing. When the clinical course is satisfactory, dressings need not be changed until 10 to 14 days.

Dressings are carried out with the same aseptic technique recommended for the initial treatment, preferably in the operating room.

6. Full Thickness Skin Loss.

Partial thickness burns heal kindly in two weeks unless they become heavily infected. Enthusiasts can show miraculous results with almost any new form of treatment provided its use is limited to partial thickness burns. The majority of "flash" burns encountered in military surgery are of partial thickness.

A full thickness burn demands untiring labor by the surgical team and may be a trying ordeal for the most courageous patient. Infection of the necrotic skin is inevitable, and chemotherapy at the best can only prevent extension of the infection to normal tissues or systemic dissemination.

If it were possible to recognize full thickness skin destruction at the onset, primary excision might be desirable. Early recognition is rarely certain in the absence of actual charring. Particularly in regions where function must be conserved, the natural separation of sequestrum from viable tissues must be accepted as the best method of management.

Full thickness areas are usually recognizable as such toward the end of the second week. Dressings are then done more frequently and separation of the slough hastened by instrument dissection. Wet saline dressings are recommended. If heavy infection is present, chlorinated dressings may be helpful. Pain during dressings is best controlled by sedation (morphine addiction is not infrequent) or pentothal anaesthesia.

Skin grafting is essential in every full thickness burn over an inch in diameter and is to be done at the earliest moment possible. Split thickness grafts cut with the razor or dermatome are preferable to pinch grafts. Traction, splinting or active motion will not prevent contractures during prolonged healing. The only means of minimizing scar formation is early closure of the defect by grafting.

Corrective plastic procedures are not the function of this theater.

7. Evacuation. Casualties with severe burns do not travel well until the initial febrile stage is past and areas of full thickness skin loss are covered with healthy granulations. They should be kept at the place of primary treatment if the tactical situation permits.

8. Materials. It is recommended that medical units prepare sterile tins of fine meshed gauze or four thickness folds of hospital gauze impregnated with boric ointment or vaseline for use in burn casualties. (Boric ointment may be somewhat preferable to vaseline as it tends to inhibit the growth of B. pyocyaneus, a frequent secondary contaminant, and is said to discourage flies and maggots). Thirty-six inch hospital gauze is folded lengthwise to nine inches, giving a strip nine inches wide and four layers in thickness. Rapid application is favored by enclosing the strip in sheets of cellophane or paper (preferably waxed) and cut to proper

sizes for face and hands. Longer strips for larger areas may be stored with an accordion fold in sterile tins. Prepared gauze may be packed in improvised containers for field airplane or vehicle first aid kits.

For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
UNITED STATES ARMY
APO 512

1 April 1943

CIRCULAR LETTER NO. 7

SUBJECT: SUPPRESSIVE ATEBRIN THERAPY AND THE CONTROL OF MALARIA.

1. The attention of all medical officers is called to NATOUSA Circular No. 38, paragraph 11, dated 29 March 1943, which outlines the use of atebrin for the suppression of malaria and certain other measures which are to be used in the battle against malaria during the period April 22 to December 30.

2. It has been demonstrated in Panama, West Africa, and the Malay Peninsula, that atebrin in doses of 0.2 grams twice a week is effective in suppressing malaria under field conditions. It is to be noted that the word "suppressing" has been used, because no true chemo-prophylaxis against malaria exists and if the dose of the infecting agent received by an individual is concentrated enough, an infection will probably result.

3. The success of the campaign outlined in Circular No. 38, paragraph 11, depends upon every man taking atebrin at the prescribed intervals and upon the observance of all methods for the prevention of being bitten by mosquitoes. Medical officers must demonstrate continuously an air of confidence and enthusiasm in this program if it is to be effective. There can be no slackers on this campaign.

4. As will be noted in paragraph 2, 2 g (1) (a), Circular No. 38, medical officers may recommend modification in suppressive therapy if hypersensitivity develops. During the first ten days of suppressive therapy, medical officers probably will receive many complaints concerning the supposed side effects of the drug. Nausea, vomiting, right upper quadrant pain, diarrhoea, stomachache, and a host of other queer disturbances may be reported. The yellowing of the integument, especially on exposed surfaces, which is a result of the staining action of the drug will disturb many individuals. When this occurs, medical officers must demonstrate their professional skill and tact. A sympathetic ear should be given to all complaints and then they should be carefully, but firmly, explained away. On the basis of past experience but relatively few individuals should be truly hypersensitive to atebrin. It has been repeatedly demonstrated that early symptoms will pass off within two or three weeks if suppressive therapy is continued and that thereafter the drug is well tolerated.

5. In hyperendemic areas, the prescribed suppressive dose will probably be inadequate. In such areas the suppressive dosage should be increased to 0.1 gram per day for six days a week, Monday through Saturday inclusive, with Sunday being a day of rest. A unit may be considered

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be in a hyperendemic area when morbidity rates reach in any week, a calculated yearly rate of 1000 per 1000 effectives (i.e. - 20 cases of malaria occurring in a unit of 1000 men in one week).

6. In individuals who are truly hypersensitive to atebrin, suppressive therapy will be carried out by the administration of quinine sulfate, grains 10 per day, during the balance of the period designated for suppressive treatment with atebrin.

7. Quinine is scarcer than gold. The Journal of the American Medical Association, February 6, 1943, under Current Comment states, that all druggists are being asked to give up every bit of quinine they possess in order that the needs of the army and navy may be met. Hence, no individual should be shifted from atebrin to quinine until the medical officer is convinced that a true hypersensitivity to the drug exists. This campaign can and must succeed. It is your professional duty to see that it does.

Frederick A. Blesse

FREDERICK A. BLESSE,
Brigadier General,
Surgeon, NATOUSA.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 512

10 Apr 43

CIRCULAR LETTER NO. 6

SUBJECT: TREATMENT OF MALARIA.

1. Malaria is a disease problem of primary importance in NATOUSA. Medical officers should make every effort to familiarize themselves with the clinical appearance and laboratory diagnosis of this disease. Malaria will manifest itself in three main forms, aestivo-autumnal (malignant tertian), simple tertian, and the quartan type. However, a proportion of the patients will develop mixed forms of the disease.

2. It is important that all medical officers realize that aestivo-autumnal (malignant tertian) malaria is common in North Africa, and that it may manifest itself in queer forms so as to simulate dysentery, jaundice, bronchopneumonia, meningitis, coma, alcoholic mania, heat stroke, sulfonamide drug fever, and other puzzling symptom complexes. Malaria does not respect place or person and it will occur in the wounded and in other patients in surgical wards. From now on, every patient who develops a fever in NATOUSA must be suspected of having malaria until proved otherwise by the examination of stained thick and thin blood films. It must always be kept in mind, that a patient may have malaria despite the fact that parasites are not found in his blood films, and if the clinical course of the disease is typical of malaria, a therapeutic trial of quinine should be instituted despite negative laboratory evidence. If laboratory facilities are not available and the patient is suspected of having malaria, a thick and thin blood film should be made (preferably during the period of chill and fever) and treatment immediately instituted. The blood film should then be sent to a laboratory where facilities for the diagnosis of malaria are available. If the patient is to be evacuated immediately, treatment should be started, and the blood film wrapped and sent with the patient in a field medical record envelope or strapped with adhesive to the E.M.T. Malaria should not be reported upon the S & W or 86ab reports without laboratory confirmation of the diagnosis. All instances of aestivo-autumnal (malignant tertian) and all patients severely ill with benign tertian or quartan malaria should be evacuated to a hospital immediately and patients who are being treated for aestivo-autumnal malaria should not be transferred to another hospital (unless it is absolutely necessary) until they are convalescent. Mild simple tertian or quartan cases may be treated with their unit "in quarters" if hospitalization is unavailable. All patients suffering from malaria should be kept under a mosquito bar until the course of plasmochin is finished and recovery has taken place. In hospitals or in quarters, patients suffering from malaria should not have their mosquito bars raised for "morning care" until at least one hour after sunrise and "evening care" should be completed at least one half hour before sundown. Relapses of malaria will certainly occur despite the best of treatment and in such instances therapy should be repeated as outlined below. Patients who develop backwater fever should be sent to the Zone of the Interior as soon as their condition permits. The following outline for the treatment of malaria is taken from SGO Circular Letter No. 135, Oct. 25, 1942, and should serve as a guide in the treatment of malaria.

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3. Therapy. a. Malaria - uncomplicated. (Patients able to retain oral medication.)

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(1) Combined CAT Treatment. (Method of choice)
(a) Quinine sulphate, 0.64 gram(10 grains) three times daily after meals for 2 or 3 days, or until pyrexia is controlled. Then give
(b) Atabrine, 0.1 gram (1½ grains) three times daily after meals for five days. Then after 2 days without antimalarial medication give
(c) Plasmochin, 0.01 gram (3/20 grain) three times daily after meals for five days, except for the debilitated patient, who should receive only two doses daily. (Discontinue if toxic symptoms occur. Never give atabrine and plasmochin concurrently)

(2) Atabrine - Plasmochin treatment. (May be used for simple vivax infections and in other infections when no Quinine is available.)
(a) Atabrine, as above for 7 days. Then, after 2 days without antimalarial medication, give plasmochin, 0.01 gram, three times daily for 5 days, as above.

(3) Quinine - plasmochin treatment. (Method when no atabrine is available.)
(a) Quinine sulphate, as above, for 7 days during the last 5 of which accompany each dose of quinine with plasmochin, 0.01 gram, three times daily.

NOTE: - Quinine sulphate tablets are more quickly effective if dissolved before taken. Ten grains of Quinine Sulphate may be dissolved in one ounce of water which has been acidified by the addition of 10 minims of dilute sulphuric or hydrochloric acid. (BSP) or 2 grams (30 grains) citric acid.

(b) Malaria with coma. Quinine dihydrochloride, 0.64 gram (10 grains) in at least 200 cc. sterile normal saline given intravenously very slowly over 4 hours until patient can retain oral medication; then treat as uncomplicated case.
(c) Malaria with vomiting (unable to retain oral medication).
1. Quinine dihydrochloride, 1.0 gram (15 grains) in 10 cc. sterile normal saline injected carefully into the gluteal muscles of one buttock; site of injection then massaged thoroughly for 2 minutes. Care must be taken to avoid the sciatic nerve. Dose may be repeated if necessary in 6 hours in another buttock. As soon as patient can retain oral medicament treat as an uncomplicated case. (See 2 a)
2. Atabrine dihydrochloride, 0.2 gram (3 grains) in 5 cc. sterile normal saline may be substituted for intramuscular injection if no quinine dihydrochloride is available.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 512

25 March 1943

CIRCULAR LETTER NO 5

DYSENTERY - - BACILLARY

1. The attention of all Medical Officers in this theater is invited to an anticipated high incidence of Dysentery, particularly in Tunisia, where it annually, during the first part of April, attains epidemic proportions.

2. The usual fly control measures, sanitary inspections by Medical Officers, strict application of field sanitary procedures, and education of military personnel in requirements for personal hygiene should be instituted in all units.

3. It is suggested that all units' medical personnel have adequate supplies of sulphaguanidine, castor oil, paregoric, bismuth, and pills of camphor and opium.

For the SURGEON:

E. STANDLEE,
Colonel, M.C.,
Deputy Surgeon.

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 512

22 March 1943

CIRCULAR LETTER NO. 4

PSYCHOTIC AND NEUROTIC PATIENTS, THEIR MANAGEMENT AND DISPOSITION

1. The problem of psychotic, psychoneurotic and anxiety states in the personnel of the A.U.S. in NATOUSA is a real one, and is becoming more acute as relatively new and untried troops are placed on combat duty. Experience in this theater, which is derived from reports of the C.T.F. and II Corps show that when troops are in battle for the first time, a considerable number of psychiatric casualties may be expected. The curve of such casualties is a sharp one which will fall rapidly as troops become acclimated to combat conditions with the exception that a secondary rise in the curve will be noted when troops are kept under such conditions for long periods of time.

2. For sake of convenience psychiatric casualties can roughly be classified as follows:

a. Psychotic States. Unfortunately, a number of individuals with histories of previous treatment in mental hospitals have been inducted into the Army. These men are having recurrences of their psychoses. The only problem in respect to such individuals is that the nature of their psychosis be promptly recognized by the Medical Officer and the proper disposition made of them. At the present moment many of these patients are being sent to U.K. which is not desirable because one theater of operations should not throw such a burden upon another. Whenever it is possible psychotic patients should be sent directly to the U.S.A.

b. Psycho-neurotic States. The individuals who fall into this classification are those who generally have past histories which show that they were unstable in civilian life. They are the ones of whom it is frequently said, "The Army will make a man out of him." Unfortunately the Army has its difficulties in such an endeavor, and has instead a problem child on its hands. These individuals are especially hard to handle as members of combat units and in desperation unit commanders resort to all sorts of subterfuges to get them sent "down the line" with diagnosis of "shell shock," "gastric ulcer," etc. Upon reclassification a fair number of these individuals will be able to perform some type of base section duties. However, a certain group will be complete misfits in whatever unit they are placed, and because of their inaptitude or other characteristics should be discharged under the provisions of Section VIII.

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c. Anxiety States. Personnel suffering from these physiological and psychological disturbances should be the special concern of the Army, because with proper treatment many of them can be promptly rehabilitated for combat duty, and the majority of the remainder will perform well in the base section. Individuals who are suffering from anxiety states rarely give histories of previous difficulties. The factors which produce these states are multiple, and among them are exhaustion, lack of food, equipment or munitions, poor leadership, and extremely difficult, immediate personal tactical situations. Suddenly, when they are operative, something happens to an otherwise balanced intellect, and an acute anxiety state is produced. Unfortunately, at the present time the inception of these disturbances is frequently not being recognized by unit commanders or medical officers and the symptoms progress to become full blown. Then they are frequently evacuated with a diagnosis of "shell shock" on their E.M.T. These patients all read their E.M.T. sooner or later, and when they see the diagnosis of "shell shock" they have something that they know of, and a fixation of the psychological component of their illness frequently results. Much can be done for this group if the nature of their disturbance is understood and recognized, and the proper treatment is instituted and carried out in forward areas.

d. Exhaustion States. These disturbances are primarily physiological in nature, but are frequently misdiagnosed by forward medical officers, and hence personnel is sent down the line of evacuation improperly labelled as "shell shock," anxiety state or psychoneurosis. Individuals suffering from exhaustion can in practically every instance be treated in forward areas and returned to their units within a very few days.

3. Treatment of Anxiety and Exhaustion States. At the present time the treatment of these physiological and psychological disturbances in forward areas is frankly not very good; the reason for this being that many of the Medical Officers who deal with these men do not really understand the nature of the disturbances. Sedation to the point of light anaesthesia is the basis for the treatment of anxiety states, and it is not being used. None of the patients are arriving at the surgical or evacuation hospitals completely "knocked out," but instead they are being given, for example, 1½ grains of phenobarbital, 15 grains of sodium bromide or what is worse, morphine. Hence, with an evacuation line which is long (12 to 18 hours) plenty of time is being allowed to elapse in which a fixed neurosis can develop. The ideal place for the treatment of these patients is in the evacuation hospitals and trained psychiatrists are being attached to corps or larger units so that the true nature of psychic disturbances will be recognized and proper therapy instituted. These psychiatrists will be used for instructing battalion and clearing company surgeons in the first aid therapy of acute psychiatric casualties and will supervise the diagnosis, sorting, therapy and rehabilitation of patients suffering from anxiety states who reach evacuation and surgical hospitals.

4. It is therefore believed on the basis of the situation as it now exists that:

a. The term "shell shock" shall not be used as a diagnosis. The term "anxiety state" will be the sole diagnosis permitted on E.N.T. or F.M.F. of patients who are suffering from the physiological and psychological disturbance described in 2 c of this report.

b. Psychiatric casualties should be segregated from other patients.

c. Sodium Amytal for intravenous use in sterile 7½ grain ampules will be for use in clearing stations.

Albert H. Kenner

ALBERT H. KENNER,
Brigadier General,
Surgeon

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HEADQUARTERS
NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon
APO 512

20 March 1943

CIRCULAR LETTER NO. 3

CHEMICAL WARFARE MEDICINE

While there is no means of predicting the exact time when Gas Warfare will be launched against our troops, the initial burden following such attacks will fall upon the medical department. Because of the importance of 1st echelon medical care for gas casualties, their state of training should be maintained at full field efficiency levels. Programs intended to develop and sustain this capability resolve upon the resourcefulness of the medical officers. While the difficulties of keeping interest in this phase of War Medicine before gas is used is recognized, adequate preparation will pay large dividends. The following outline will help in pursuing this program.

1. Indoctrination and adjustment to the philosophy of gas warfare. This is important to medical personnel who are continually exposed not only to the hostile attacks but also to every casualty they handle.

a. The enlisted personnel must be made to appreciate the tremendous value of speed in first aid procedures.

b. It must be stressed that the prevention of a lesion is easier, quicker, and far more economical than all therapy.

c. A knowledge of gas warfare tends to dissipate the fear associated with this type of warfare, but it should develop a wholesome respect for chemical agents.

d. The responsibility for personal decontamination of the skin lies with the individual soldier and he should in most instances be able to care for himself and continue the fight. The medical department assists and augments these first aid procedures and renders definitive treatment.

2. Knowledge of Chemical Agents.

a. Certain basic information is essential for all military personnel to know: Identification of agents; some elements of their action; the proper use of individual protective measures.

b. Other further information is essential for medical department personnel:

(1) Precautionary measures to be taken in handling contaminated casualties.

(2) Sufficient familierity with the physiological actions of the agents to facilitate recognition of lesions and symptomtology.

(3) Sufficient characteristics of chemical warfare to recognize areas to be avoided in locating installations and evacuation routes.

3. First Aid. In so far as possible first aid measures should be performed by the individual soldier. Medical personnel must be thoroughly familiar with first aid and provide those phases beyond the individual soldier.

First aid measures are being improved each day and new developments will be made available as rapidly as they are forthcoming. Such points as the following should be stressed in training:

a. Rapid use of protective ointment for the skin.

b. M-1 Eye solution for lewisite in the eye.

c. Copious water irrigation for mustard in the eye.

d. 6% Hydrogen peroxide for lewisite on the skin.

e. Copper sulphate solution for white phosphorus.

f. Fast and rapid evacuation for lung irritant casualties.

g. Proper care of blistered lesions.

h. Reassurance without evacuation for irritant smoke and lacrimator casualties.

4. Vesicant Casualties.

a. Skin Lesions - Blot agent off skin. Remove contaminated clothing. Rub M-4 ointment over contaminated skin area for one minute and wipe off. Repeat 2 to 3 times. Then wash with soap and water if possible. Bleach powder solution, D.A.T. in triacetin, or organic solvents may be used for mustard. 6% hydrogen peroxide is the best treatment for lewisite. Do not open any blisters, but aseptic ly drain lewisite blister with syringe and needle. Treat any torn blister with sulfadiazine ointment. Use Amyl salicylate for unopened blisters.

b. Eye Lesions. - Main dangers are from liquid splash lesions and secondary infections. Use immediate copious washing with water from canteen. Then use canteen cap as an eye wash. M-1 eye solution should be instilled in eyes at once for lewisite contamination. Local analgesics (nose and eye drops) will relieve pain, but cocaine should not be used. Keep eye completely atropinized until healed. Do not bandage eyes in the field. Sodium sulamyd solutions should be used to prevent or control infection.

c. Lung Lesions. - Essentially same for all vesicant agents. Rest, sedation, and general supportative measures. Main danger to life is secondary pneumonitis and sulfonamides (sulfadiazine by choice) should be used early to prevent or minimize bacterial invasion. The prolonged convalescence may be attended by frequent complications.

d Systemic Effects. - Lewisite - Arsenical poisoning is treated with glucose infusions, high CHD and vitamin intake and supportative measures. Mustard has no significant systemic effects. Nitrogen mustard - Atropine sulphate will control salivation, diarrhoe, and abdominal cramps. Barbiturates should be used for muscular hypertonicity and near anaesthetic doses may be required for convulsive seizures.

5. Lung Irritant Casualties. The service gas mask offers complete protection and all these casualties are preventable with good gas discipline. Treat as a medical emergency with absolute rest and litter evacuation. Support with external warmth and warm non-alcoholic fluids. Sedation is necessary and contrary to previous teaching, moderate morphine dosages may be used. Oxygen therapy is most important and most valuable treatment for pulmonary oedema or impending oedema. Venesection (500cc.) is indicated for right heart embarassement. Do not give plasma or cardiac stimulants. Use sulfonamides where indicated but not routinely.

6. White Phosphorus Casualties. Cover burning phosphorus with 5% - 10% copper sulphate solution. Use water until copper sulphate can be applied. Do not use mud. Remove particles with forceps and treat as any thermal burn. At night or in a darkened chamber small phosphorus particles may be located by virtue of their phosphorescence.

7. Irritant Smoke and Lacrimating Agent Casualties. Casualties may be severely uncomfortable for a short while but no fatalities and no permanent injuries will occur. Eye and nose drops and aspirin will usually alleviate symptoms. Evacuation should rarely be necessary.

8. Hydrogen Cyanide Casualties. Start artificial respiration if breathing has ceased. Keep warm. Give Amyl Nitrate by inhalation. Casualties will recover if breathing begins again.

9. Medical Records. The manner in which the initial information is recorded is most important for later care. All personnel should be trained in correctly recording data on the Emergency Medical Tags. These tags should include: Agent by name, body area involved, first aid measures given, and the time lag before first aid was initiated. A statement of "Gas" alone is of very little value. If possible it should also be noted whether liquid or vapor caused the lesion and the method of dissemination used. For example: Burn, right arm, due to mustard. Protective ointment after 4 minutes. Liquid drops - airplane spray.

10. Gas Casualty Equipment. All medical personnel should be intimately familiar with the contents of the gas casualty chest and of the gas casualty first aid kits. Shortages in these items of equipment are now being filled.

11. Chemical Contamination of Food and Water. The consumption of chemically contaminated food or water will produce casualties unless precautions are taken.

FOOD. The three main factors to be considered are: (1) the type of contaminant used, (2) the extent of contamination, and (3) the duration of contamination. Of these the first is the most important and all food contaminated with lewisite, arsine, or other arsenical compounds must be destroyed as it is impracticable to satisfactorily remove the arsenic content.

The decisions concerning food are incumbant upon the medical officer and he will be particularly concerned with the food which is to be used for immediate consumption.

a. Protective Value of Packaging.

(1) Air tight bottles and sealed cans give complete protection against vapor and liquid.

(2) Wood boxes give little protection against either liquid or vapor.

(3) Waxed paper boxes give good protection against vapor and fair protection against liquid.

(4) Paper wrappings give poor protection.

(5) Foil and thick cellophane wrappings give fair to good protection.

(6) Single layer coverings of cloth give no protection.

(7) Coverings of sod and earth give good protection against vapor and liquid.

(8) Generally, double layers greatly increase the protective efficiency of packaging materials.

Food dumps should be dispersed over a camp site. These dumps should be covered with tarpaulin, and another tarpaulin suspended, tent fashion, above the first whenever possible. In case of chemical attack the liquid is caught on the upper tarpaulin, the ends of which are then raised utilizing ventilation to remove such vapors as may have penetrated it.

b. Certain foods have no resistance to mustard, liquid or vapor, and must be destroyed, i.e. cheese. Other foods may be salvaged if contaminated:

(1) Butter - by removing a 1/4 to 1/2 layer from the outside, the butter is safe to use.

(2) Bacon - The rind of bacon will almost completely withstand either the liquid or vapor of mustard. By removing the rind and a small amount of the underlying fat, bacon, when cooked, is entirely safe.

(3) Red Meats - If mustard is visually apparent the area to one inch depth should be removed with a knife. Boiling for two hours will make the meat safe for consumption. Frying will not.

(4) Flour, sugar, oatmeal, etc. - These allow only a penetration of mustard liquid to a depth of 1/4 to 1/2 inch and can be detected by a hardening or caking of the article. If this hardened or caked part is discarded, the remainder may be aerated and cooking will destroy the remaining vapor.

(5) Potatoes and vegetables - If washed down well and thoroughly boiled they are safe.

(6) The outside of the tins or bottles should be cleaned with an organic solvent (gasoline) or bleach powder solution and then washed with water before opening.

WATER. Water supplies should always be assumed to be contaminated when obtained from regions previously shelled, sprayed, or bombed with chemical agents.

The chlorine demand test will demonstrate the absence of chemical contamination of water, and the kit to run this test (with instructions) is carried by all medical battalions. It is performed as follows: To 100cc. of the water to be tested is added 1cc. of a standard bleach solution containing 0.5mg of available chlorine per cc. Ten minutes later it is tested for chlorine content with the standard ortho-tolidine reagent. If the chlorine remaining is at least 1 p.p.m. the water is potable provided all other characteristics of the water are satisfactory. However, if the chlorine remaining is less than 1 p.p.m. the water is not safe. Irrespective of all other characteristics it must not be used. This test is based upon the fact that chemical agents, if present, will rapidly take up available chlorine from a water solution.

Under no circumstances should taste or odor alone be used as a criterion of contamination. However, potable water in addition to the chlorine demand test should have no color, odor, or taste of chemical contaminants, and should have a pH of above 5.0 before chlorination.

(1) Decontamination of water is a function of the Engineer Corps. Water contaminated with mustard may be decontaminated by them. Water contaminated with lewisite or other arsenical agents is more difficult to decontaminate satisfactorily and should not be used. In an emergency only, the following method of decontamination of water contaminated with mustard may be used: 36 gallons of water are treated in a lyster bag with two pounds of activated carbon (200 mesh), one ounce of alum, and one ounce of sodium silicate. The treated water is thoroughly mixed until a heavy floc has formed and is then allowed to stand undisturbed for at least 30 minutes. It is then siphoned off the top, passed through a small filter, and transferred to a second lyster bag for routine chlorination. This is only an emergency procedure and in all circumstances only water supplied by the Engineer Corps should be used.

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ALBERT W. KENNER,
Brigadier General
Surgeon

HEADQUARTERS
NORTH AFRICAN THEATRE OF OPERATIONS
UNITED STATES ARMY
Office of the Surgeon

18 March 1943

CIRCULAR LETTER NO. 2

Subject: Maintenance of High Standards of Professional Service in Medical Installations, N.A.T.O.U.S.A.

1. The Surgeon N.A.T.O.U.S.A. has been impressed with the high standards of professional service which exists in the army hospitals in N.A.T.O.U.S.A. and desires that every effort be made to maintain the levels of professional practice. To this end it is suggested:

a. That hospital libraries be placed in a position where they are easily available to all members of the hospital staff and that the office of the Surgeon, N.A.T.O.U.S.A., be notified immediately of any deficiencies noted in medical books and journals.

b. That medical officers be encouraged to study the clinical course of interesting groups of patients with the viewpoint of collecting adequate data upon which medical and surgical reports may be based. It is requested that completed papers be submitted to the Surgeon's Office, N.A.T.O.U.S.A., for editing and forwarding to the Surgeon General.

c. That weekly clinical or clinical pathological conferences be held by the staffs of all hospitals in N.A.T.O.U.S.A.

d. That when the opportunity arises members of one hospital staff will visit neighboring hospitals for the purpose of observing professional practices.

Albert W. Kenner

ALBERT W. KENNER,
Brig. General, AUS,
Surgeon, N.A.T.O.U.S.A.

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NORTH AFRICAN THEATER OF OPERATIONS
Office of the Surgeon

18 March 1943

CIRCULAR LETTER NO. 1

THE SURGICAL USE OF THE SULFONAMIDES

1. The judgement of the individual Medical Officer will determine the indications for sulfonamide therapy as well as details of dosage and means of administration. The following paragraphs are presented as a general guide to precise and effective usage.

2. Sulfonamide therapy may be systemic, by oral or intravenous routes, or topical, by direct application to a wound or burn. The effects of topically applied sulfonamides are not purely local, as absorption of the drug is often as rapid as if given by mouth.

a. Systemic. A systemic course of sulfonamide therapy is designed to maintain a constant and effective blood level of drug concentration. This presupposes adequate kidney excretory function maintained by a fluid intake of 3000 cc and a urinary output of at least 1000 cc in 24 hours. During hot weather (sustained temperatures of 75° Fahrenheit or over) or if water is scarce, the recommended initial doses may be given, but subsequent systemic dosage should be halved to avoid excessive accumulation.

Precise and adequate dosage usually allows the intensive course to be terminated at least by the end of the second week before serious toxic reactions occur. At that time the drug may be discontinued, or the dosage decreased.

b. Topical. Because of rapid absorption, topical applications must be regarded in terms of total dosage. If the man is receiving systemic drug, the amount applied to a raw surface is correspondingly reduced.

Dead tissues and pus contain substances that inhibit the action of sulfonamides. Local application is not a substitute for adequate surgery. Even if the prophylactic value of local application be questioned, the fact must not be overlooked that it is a rapid method of establishing a blood concentration at a time when it may be difficult to assure regular peroral dosage under the exigencies of military action.

Crystalline or powdered sulfonamides for topical application should be sterile.

Mixtures of sulfonamides with ointment bases or emulsions gives unpredictable rates of absorption and bacteriostatic properties.

3. Sulfonamide Course for Contaminated Wounds. Every compounded injury may be considered contaminated.

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a. Topical Application. Each American soldier is equipped with a package containing 5.0 grams of sterile crystalline sulfanilamide which is to be sprinkled into a wound before the field dressing is applied. British wounded will have sulfanilamide applied at the RAP advanced or main dressing station. Wounds should not be packed with sulfanilamide, nor is it sensible to do more than sprinkle the points of entrance and exit of perforating wounds.

When definitive surgical treatment has been completed, the surfaces of the wound or wounds may be "frosted" with crystalline or powdered sulfanilamide. Approximately 0.1 gram per square inch of wound surface is proper frosting. Not more than a total of 10 grams of sulfanilamide should be administered topically to a patient following operation or at any wound dressing without due consideration by the medical officer. In perforating wounds of the abdomen or thorax, from 5 to 10 grams of sulfanilamide may be sprinkled into the peritoneal or pleural cavity at the completion of definitive surgical treatment.

Subsequent local sulfonamide therapy will depend on the dressing employed. In general, it will be found preferable to minimize the frequency of dressings and rely on systemic administration, than to take down dressings at frequent intervals in order to reapply the drug locally. The disadvantages of a window in a plaster cast appear to outweigh any benefits that might be derived from repeated local drug application.

b. Systemic Administration. A single dose of at least 4.0 grams of a sulfonamide is given by mouth as soon as possible to every wounded man. American soldiers are equipped with a box containing 6.0 grams of sulfanilamide which should be taken by them or given to them after wounding. British wounded will receive the peroral dose of sulfonamide at the RAP advanced or main dressing station.

With a reasonable period of evacuation, i.e. (6 hours) no more sulfonamide need be given by mouth until after definitive surgical treatment has been completed. If evacuation is delayed and surgical treatment postponed 1.0 gram sulfonamide is given every 6 hours.

To continue a course of sulfonamide therapy after operation, 1.0 gram is given every 6 hours, day and night in the line of evacuation and in hospitals for at least seven days. If at the end of this period, signs or symptoms of infection are absent, the drug may be discontinued or reduced.

It is most important to record the time and amount of initial and subsequent peroral and topical doses of sulfonamides upon the Emergency Medical Tags (American), Field Medical Card (British), and A.F.I. 1220 (British) in order that Medical Officers along the line of evacuation may be informed.

Attention is again directed to the necessity of reducing peroral dosage by half during hot weather or with diminished fluid intake and urinary output. Every effort should be made to impress nursing personnel, both male and female, with the importance of giving adequate amounts of fluid (3000cc per day) to wounded men receiving sulfonamides.

4. Sulfonamide Course for Wounds with Established Pyogenic Infection.

Bacteriological studies of the wound should be used as a guide to specific forms of therapy.

a. Topical Application. Gentle cleansing of the wound with saline solution to remove pus and necrotic debris is advisable before a sulfonamide is applied. 1-3300 azochloramid may be used if desired. "Frost" the surface with a suitable amount, but not more than 10 grams of crystalline sulfanilamide and cover with gauze dressings moistened with sterile saline or, if desired, azochloramid. Strips of vaseline gauze are then applied. The use of moist gauze prevents caking and drying. Crystalline sulfathiazole may be substituted for sulfanilamide but shows a greater tendency to "cake".

b. Systemic Administration. A dosage of a sulfonamide should be given to maintain a blood concentration of 10 milligrams per cent (free) sulfanilamide or sulfadiazine, or 5 milligrams per cent (free) sulfathiazole. An initial dose of 4.0 grams by mouth followed by 1.0 gram every 6 hours day and night will generally produce the desired blood concentration level. In hot weather or with a reduced urinary output the doses recommended are halved.

c. Parenteral Administration of Sulfonamides. In certain instances (wounds of chest, head or abdomen, severe burns, vomiting, etc.) it may be found desirable to give sulfonamides by the intravenous route. In unconscious patients a stomach tube may be used.

With the exception of sulfanilamide, intravenous solutions are made with the sodium salts of the sulfonamides. There is no preparation of the sodium salt of sulfanilamide; a 1% solution of the powdered or crystalline form may be made in sterile physiological saline. The sodium salts of the other sulfonamides are prepared in 5% solution. To make a 5% solution the sodium salt is removed from the bottle with a sterile spatula and weighed in a sterile container. 5 grams (75 grains) are added to 100 cc of sterile freshly distilled water or sterile physiological saline solution. These solutions cannot be boiled or autoclaved. Because of their alkalinity they must be given intravenously at a slow rate (15 minutes), care being taken not to get the material outside the vein as it may cause necrosis. Subcutaneous, intramuscular or intrathecal routes should be avoided for this reason. The solutions should never be added to whole blood or plasma transfusions.

The initial dosage of the sodium salts of sulfadiazine, sulfathiazole or sulfapyridine is 4.0 grams. If it is necessary to continue treatment by the intravenous route, sulfathiazole is given in 2.0 gram doses every 6 hours; sulfapyridine, 2.0 grams every 8 hours; and sulfadiazine, 2.0 grams every 10 hours.

5. Toxic Reactions. All instances of drug fever, rash, hemolytic anemia or agranulocytosis occurring under treatment should be entered on the medical record, specifying the drug used.

The complication to be particularly watched for in this theater is with the urinary tract. Adequate fluid intake particularly in hot weather and administration of alkalesis to reduce urine acidity are preventive measures.

Sulfapyridine and sulfathiazole may be present in considerable concentration in the blood in the acetylated form detectable only by colorimetric estimation of the total concentration.

6. Additional Notes and Observations. a. Certain advantages and limitations of the different sulfonamides may be listed as follows:

(1) Sulfanilamide: Best for topical application because of solubility. Bacteriological range of usefulness in systemic administration limited.

(2) Sulfathiazole: Second choice for topical use. Bacteriological range of usefulness wide.

(3) Sulfapyridine: Bacteriological range of usefulness limited. Nausea and vomiting relatively frequent. Serious complications (agranulocytosis and renal) relatively frequent.

(4) Sulfadiazine: Least toxic. Bacteriological range of usefulness wide. First choice of gas gangrene. Supply at present limited so may be conserved for very ill patients or patients sensitive to other sulfonamides.

(5) Sulfadiazine Ointment (5%): Ointment base is irritating to the eyes.

b. Preparations compounded by mixing two or more sulfonamides, or incorporating them into ointments for surgical use are usually wasteful and have no advantages.

c. Sulfathiazole applied directly to the brain substance produces convulsions in many cases.

d. Sulfonamide crystals or powder covered by vaseline gauze or other grease tends to be held by the grease instead of diffusing into the tissu

For the SURGEON:

L. STARLEE,
Colonel, M.C.,
Deputy Surgeon.

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