EXCERPT

LEVEL II

AD A088190

REPORT ~~MEDDH-286(R1)~~

AD _____

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ANNUAL RESEARCH PROGRESS REPORT

U.S. ARMY INSTITUTE OF SURGICAL RESEARCH
BROOKE ARMY MEDICAL CENTER
FORT SAM HOUSTON, TEXAS 78234

1 October 1978 - 30 September 1979

Approved for public release. Distribution unlimited.

Prepared for:
US ARMY MEDICAL RESEARCH & DEVELOPMENT COMMAND
FORT DETRICK, FREDERICK, MD 21701

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REPORT DOCUMENTATION PAGE

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1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A088 190
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4. TITLE (and Subtitle) Annual Research Progress Report, 1 Oct 78 - 30 Sep 1979	5. TYPE OF REPORT & PERIOD COVERED 1 Oct 78 - 30 Sep 79
	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Institute of Surgical Research ✓ Fort Sam Houston, Texas 78234	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 3A161101A91C-00 3S161102BS05-00 3S162772A814-00
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Medical Research & Development Command Fort Detrick Frederick, MD 21701	12. REPORT DATE 30 September 1979
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17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

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This report documents the clinical and laboratory activities of the US Army Institute of Surgical Research during the fiscal year 1979. These activities include patient care, clinical investigation and laboratory research in the areas of (1) burn injury, (2) acute renal failure, and (3) general trauma. Special emphasis is placed on the clinical management of burned patients and on studies related to prevention and treatment of burned wound infection.

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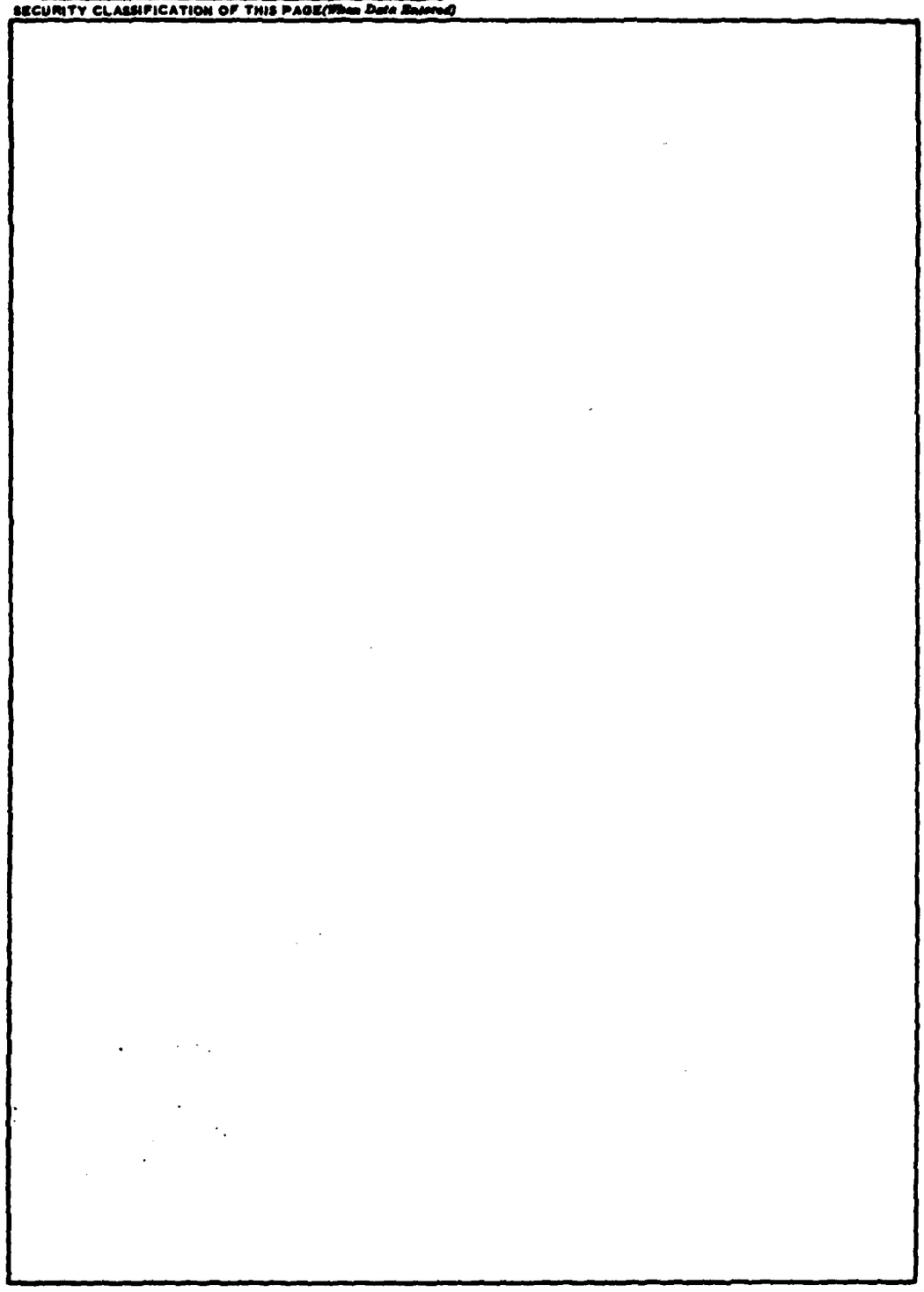

DEPARTMENT OF THE ARMY
US ARMY INSTITUTE OF SURGICAL RESEARCH
BROOKE ARMY MEDICAL CENTER
FORT SAM HOUSTON, TEXAS 78234

SGRD-US

SUBJECT: Annual Research Report FY 1979

TO: SEE DISTRIBUTION

Annual report(s) of the US Army Institute of Surgical Research for FY-79 are forwarded under provisions of the OTSG Regulation 70-31, dated 2 April 1969.

Basil A. Pruitt, Jr.

BASIL A. PRUITT, JR., M.D.
COLONEL, MC
COMMANDER & DIRECTOR

FOREWORD

"The essential wildness of science as a manifestation of human behavior is not generally perceived.....

It cannot be prearranged in any precise way; the minds cannot be lined up in tidy rows and given directions from printed sheets. You cannot get it done by instructing each mind to make this or that piece, for central committees to fit with the pieces made by the other instructed minds. It does not work that way.

What it needs is for the air to be made right..... If the air is right the science will come in its own season like pure honey."

Lewis Thomas "The Lives of a Cell"

The provision of resources is certainly a necessary, proper, and appreciated function of central committees and the Institute is certainly indebted to the Medical Department in general and the Medical R&D Command in particular for such support. It is obvious however, from Dr. Thomas' remarks, that the "air quality" can scarcely be influenced by a central committee and the very nature of science may vitiate the current emphasis and attempts of governmental bodies to direct research. Committees and management techniques to "direct" science would seem to contain their own inborn errors of metabolism which preordain functional ineffectiveness and a limited future. In fact one might anticipate that such central management groups might only promote the generation of scientific smog.

The studies reported in this volume have addressed clinically important problems of a categorical disease, thermal injury, but the data generated have direct application to the care and treatment of all injured soldiers. These data have been derived from efforts focused on problems of significance identified in the course of caring for burn patients. The "air" was "made right" by the combination of patient density and the enthusiasm, insight, and effective interplay between the Clinical and Laboratory staff of the Institute. As is also characteristic, solution of each problem has been quickly followed by the identification of new problems and questions and in that sense the process contains its own mechanism for amplification, guidance and expansion which could be termed the inertia or even acceleration

of scientific motion. The air quality of the Institute is well indexed by the progressive change over the past three decades from enumeration studies of cause of death through studies of whole body response to injury., to the reports herein of organ and even cell-specific effects of injury in man. Such progression has been rewarded by identification of universal characteristics of basic disease processes and by the development of physiologically based surgical and pharmacologic techniques to improve survival of the combat injured soldier.

Basil A. Pruitt, Jr.

BASIL A. PRUITT, JR., MD, FACS
Colonel, MC
Commander and Director

The opinions expressed above are the private views of the author and are not to be construed as official or as reflecting the views of the US Army Medical Research & Development Command, the Department of The Army or the Department of Defense.

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PROJECT NO. 3S162772A814-00, APPLIED RESEARCH

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY

1. AGENCY ACCESSION*	2. DATE OF SUMMARY*	REPORT CONTROL SYMBOL
DA OA 6380	79 10 01	DD-DR&E(AR)636

3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY*	6. WORK SECURITY*	7. REGRADING*	8a. DISP'N INSTR'N	8b. SPECIFIC DATA-CONTRACTOR ACCESS	9. LEVEL OF SUM
78 10 01	D. CHANGE	U	U	NA	NL	☒ YES ☐ NO	A. WORK UNIT

10. NO./CODES:*	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER
a. PRIMARY	62772A	3S162772A814	00	118
b. COSATI///////	61102A	3S161102BS05	00	089
c. CONTRIBUTING				

11. TITLE (Precede with Security Classification Code)*

(U) Clinical Operation, Center For Treatment of Burned Soldiers (44)

12. SCIENTIFIC AND TECHNOLOGICAL AREAS*

003500 Clinical Medicine

13. START DATE	14. ESTIMATED COMPLETION DATE	15. FUNDING AGENCY	16. PERFORMANCE METHOD
50 07	Cont	DA	C. In-House

17. CONTRACT/GRANT: Not Applicable

a. DATES/EFFECTIVE: EXPIRATION:

b. NUMBER:*

c. TYPE: d. AMOUNT:

e. KIND OF AWARD: f. CUM. AMT.

18. RESOURCES ESTIMATE	a. PROFESSIONAL MAN YRS	b. FUNDS (In thousands)
FISCAL YEAR PRECEDING 79	50	1182
FISCAL YEAR CURRENT 80	50	1186

19. RESPONSIBLE DOD ORGANIZATION

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TELEPHONE: 512-221-2720

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PRINCIPAL INVESTIGATOR (Furnish SSAN if U.S. Academic institution)

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TELEPHONE: 512-221-3301

SOCIAL SECURITY ACCOUNT NUMBER:

ASSOCIATE INVESTIGATORS

NAME:

NAME:

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FOREIGN INTELLIGENCE NOT CONSIDERED

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22. KEYWORDS (Precede EACH with Security Classification Code)

(U) Heterograft; (U) Resuscitation; (U) Homograft; (U) Air evacuation; (U) Thermal injury; (U) Inhalation injury; (U) Topical therapy; (U) Autograft

23. TECHNICAL OBJECTIVE,* 24. APPROACH, 25. PROGRESS (Furnish individual paragraphs identified by number. Precede text of each with Security Classification Code.)

23. (U) The Clinical Division of the US Army Institute of Surgical Research continues its role as a major specialized clinical treatment center for thermally injured military personnel. Its main objectives are the investigation and modification of new diagnostic and therapeutic methods for optimum care of the burn patient as well as dissemination of the scientific advances to military and civilian medical treatment centers.

24. (U) Thermally injured patients both from the Continental United States and throughout the world are evacuated to the US Army Institute of Surgical Research for intensive inpatient therapy. Carefully controlled evaluation of the efficacy of many treatment modalities is undertaken.

25. (U) 7810 - 7909 Two hundred sixty eight seriously burned patients were admitted and treated during 1978. Studies of effectiveness of prevention of massive upper gastrointestinal hemorrhage indicated that no patients required operative intervention for such complications. The treatment protocol developed at this Institute has thus eliminated Curling's ulcers as a significant cause of morbidity and mortality. Continued investigation of the metabolic response to and the nutritional support of acutely burned patients has further delineated basic disease mechanisms which serve as a guide for the support of acutely burned patients and as a model for injured man as well. Studies of pulmonary function following crystalloid and colloid intravenous fluid resuscitation are identifying advantages and disadvantages of such treatment.

*Available to contractors upon originator's approval.

EXCERPT

See pages i, ii, 2, 3

(1)

REPORT MEDDH-288(R1) AD _____

ANNUAL RESEARCH PROGRESS REPORT

U.S. ARMY INSTITUTE OF SURGICAL RESEARCH
BROOKE ARMY MEDICAL CENTER
FORT SAM HOUSTON, TEXAS 78234

1 October 1977 - 30 September 1978

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US ARMY MEDICAL RESEARCH & DEVELOPMENT COMMAND
FT. DETRICK, FREDERICK, MD 21701

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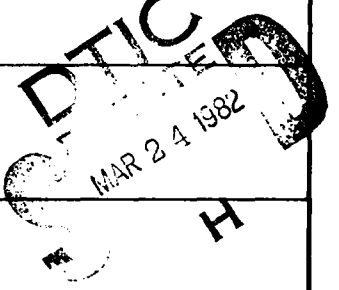

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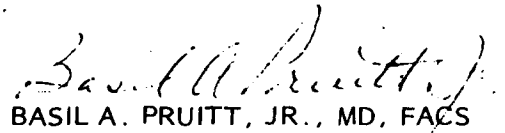
Basil A. Pruitt Jr.

BASIL A. PRUITT, JR., M.D.
COLONEL, MC
COMMANDER & DIRECTOR

FOREWORD

The burn patient experiences the same pathophysiologic changes as any injured man, with the extent and duration of change in direct proportion to burn size or severity of injury. These changes involve not only the skin, the injury of which is obvious to all, but every other organ system as well. All the early and late disturbances of organ and cell function and complications which occur in burn patients, occur in patients who have sustained mechanical trauma and even those undergoing elective surgery. Consequently, the studies reported herein have direct application to all injured soldiers.

The treatment advances resulting from these and prior studies have not only improved survival of the severely injured, but have both improved and simplified treatment of patients with lesser injuries. In short, the challenge of resuscitation and wound care of patients with relatively minor injuries has been met and no longer serves as a patient care limitation. The formerly common complications of renal failure, gas gangrene and burn wound sepsis have been brought under control and more recent complications, such as acute pulmonary insufficiency have been significantly reduced and ameliorated as a result of the work of the staff of this Institute and other clinically based research organizations. The clinical activities of such research groups serve as both anchor to insure investigative relevance and compass to point the way to further progress.



BASIL A. PRUITT, JR., MD, FACS
Colonel, MC
Commander and Director

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PROJECT NO. 3S161102BS05-00, MILITARY BURN RESEARCH

PROJECT NO. 3S162774A820-00, MILITARY BURN TECHNOLOGY

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TELEPHONE: 512-221-2720

20. PERFORMING ORGANIZATION

NAME: US Army Institute of Surgical Research
Clinical Division
ADDRESS: Ft Sam Houston, Texas 78234

PRINCIPAL INVESTIGATOR (Furnish SSAN if U.S. Academic Institution)
NAME: Richard C. Treat, MAJ, MC
TELEPHONE: 512-221-3301
SOCIAL SECURITY ACCOUNT NUMBER:

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25. (U) 7710 - 7809 Two hundred thirty eight seriously burned patients were admitted and treated during 1977. Studies during the resuscitation period have emphasized minimization of fluid volume loading and the role of colloid-containing fluids in resuscitation is being reevaluated. Combination of 133 Xenon lung scan, fiberoptic bronchoscopy and pulmonary function tests permit the accurate diagnosis of inhalation injury. The prophylactic use of steroid therapy has been found ineffective in preventing the sequelae of inhalation injury. Improved nutritional regimens have ameliorated weight loss and body mass erosion in burn patients and have remained effective nonoperative treatment of the superior mesenteric artery syndrome. Both small bowel and colon complications of burn injury have been identified and described. The indications for burn wound excision have been refined and related to both depth and extent of burn with specific criteria established for both scalpel excision at the level of the investing fascia and tangential excision of burned hands.

*Available to contractors upon originator's approval

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ANNUAL PROGRESS REPORT

PROJECT NO. 3S161102BS05-00, MILITARY BURN RESEARCH

REPORT TITLE: CLINICAL OPERATION, CENTER FOR TREATMENT OF BURNED SOLDIERS

US ARMY INSTITUTE OF SURGICAL RESEARCH
BROOKE ARMY MEDICAL CENTER
FORT SAM HOUSTON, TEXAS 78234

1 January 1977 - 31 December 1977

Investigators:

Hugh D. Peterson, DDS, MD, Colonel, MC
James Dorethy, MD, Major, MC
Harry R. Jacobson, MD, Major, MC
Jerold Z. Kaplan, MD, Major, MC
Victor Lam, MD, Major, MC
Thomas J. Lescher, MD, Major, MC
Barry A. Levine, MD, Major, MC
Anton J. Jirka, MD, Lieutenant Colonel, MC
Theodore E. Plucinski, Lieutenant Colonel, MC
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Claudia Zitzka, 2LT, AMSC
Basil A. Pruitt, Jr., MD, Colonel, MC

Reports Control Symbol MEDDH-288(R1)

UNCLASSIFIED

ABSTRACT

PROJECT NO. 3S161102BS05-00, MILITARY BURN RESEARCH

REPORT TITLE: CLINICAL OPERATION, CENTER FOR TREATMENT OF BURNED SOLDIERS

US Army Institute of Surgical Research, Brooke Army Medical Center, Fort Sam Houston, Texas 78234

Period covered in this report: 1 January - 31 December 1977

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Reports Control Symbol MEDDH-288(R1)

Two hundred and thirty eight patients were admitted to the Clinical Division of the United States Army Institute of Surgical Research during the calendar year of 1977. The principal emphasis of the Clinical Division has continued to be the provision of optimal care for thermal, chemical and electrically injured patients. In addition, original scientific investigation has continued to form the basis for recommendations for improvement and advances in the care of these patients. Major areas of such clinical research included investigation of hemodynamic alterations, pulmonary responses following injury, cardiac dynamics, infection control and continued studies in the areas of post injury nutrition and metabolism. This report summarizes the activities of the Clinical Division of the U.S. Army Institute of Surgical Research during the calendar year 1977 and catalogues the types of treatment, responses to treatment and complications which have contributed to morbidity and mortality of burn patients.

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EXCERPT

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