



OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON 25, D.C.

OSD1.941111.004

31 March 1964

MEMORANDUM FOR (See Distribution)

SUBJECT: Revised Minutes of the Thirtieth Joint Medical Research Conference

The following were present at the thirtieth conference in Room 3-E-794,
The Pentagon, 0900-1145, 8 January 1964:

Lt Cdr C. E. Alexander, Jr., MC, USN, BuM&S, D/N
B/General Robert E. Blount, MC, USA, AMR&DC, D/A
Col Jack Bollerud, USAF, MC, AFRSTA, D/AF
Lt Col Louis B. Edelman, MC, USA, AMR&DC, D/A
Dr. F. J. Frese, Jr., OAD(R), ODDR&E
Lt Col Charles W. Cook, GSC, USA, ARO, D/A
Col Joseph D. Goldstein, MC, USA, Army SGO, D/A
Col Herschel E. Griffin, MC, USA, OASD/M - ODASD/H&M
Dr. Frank W. Hartman, AFMSPA, D/AF
Col Robert H. Holmes, MC, USA, DASA
Dr. Gerald M. McDonnell, Univ. Calif. Med. Ctr., Chairman
Capt John A. O'Donoghue, MC, USN, BuM&S, D/N
Capt Carl E. Pruett, MC, USN, ODCNO(Dev), D/N
Col John M. Talbot, USAF, MC, AFMSPA, D/AF
Lt Col Richard R. Taylor, MC, USA, AMR&DC, D/A

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The secretary introduced the new chairman of the conference, Dr. Gerald M. McDonnell.

Dr. McDonnell then called the meeting to order and gave a brief summary of his background, including service on many federal medical panels as well as current assignment to the Defense Science Board, and chairmanship of the DDR&E Advisory Panel on Medical and Biological Sciences.

Dr. Griffin suggested an amendment to the minutes of the twenty-ninth conference as they pertain to the GSA stockpile of quinine. He stated that the decrease in the stockpile had resulted not from any automatic control by GSA, but from the fact that several years ago the Services had declared that quinine was no longer a required supply item since it had been adequately replaced by synthetic drugs. The services then turned their supplies of quinine over to GSA for disposal as surplus. This had been the cause of the reduction in the size of the stockpile. After the acceptance of this correction by the conference, the minutes were approved as amended.

The first item on the agenda was the question of the proposed Army directive to require all military personnel on duty in Korea and South Viet Nam to be given passive immunization with gamma globulin as a protection against infectious hepatitis. Dr. Hartman raised questions as to the value of such protection, especially since it might encourage the individual soldier to neglect other preventive measures, such as avoidance of native food and drink.

TAB A



WNRC:
ACCESSION# 68A-5157
RG: 330
FILE NAME: 212-Medical Sciences
LOCATION: 2-38-22-6-1
Box # 17

L/Colonel Meroney said that many physicians seem reluctant to participate in both research and patient-care, but this was widely practiced in the Services. Colonel Vorder Bruegge pointed out that in civilian practice most research physicians also engage in practice, and as a result young physicians entering the military expect this type of arrangement, and would be disappointed with the military system if they did not have this type of opportunity. General Talbot called attention to the fact that certain military medical laboratories like the USAF Aerospace Medical Research Laboratory, and the USN Laboratory at New London, cannot and should not be patient-oriented. Admiral Welham pointed out that a good clinical research program could be an excellent source for input to such laboratories.

Dr. McDonnell asked whether the research program on night vision sponsored by the Army at Fort Belvoir was medically oriented. Colonel Vorder Bruegge responded that it was primarily concerned with electronic devices. The chairman next inquired as to the status of the program on the radiation-preservation of foods. Dr. Frese said that he had visited these labs at Natick and found that they had a very active program and a fine staff. Colonel Vorder Bruegge said that irradiated bacon had already been approved and that pork and chicken were in the final stages of approval. Dr. McDonnell inquired as to whether radioactivity presented a problem, and was told that for mass production rather high energies were required which could produce some degree of radioactivity, but that this was minimal; the difficulty is that newer and more sensitive detectors are developed which detect even this trace of radioactivity and then administrative difficulties with FDA and AEC arise. Colonel Vorder Bruegge did not feel that this represented a major problem.

The chairman then inquired as to the level of effort in research on tissue effects in magnetic fields. Admiral Welham said that there were active programs in this area both at Pensacola and at New London. Dr. Frese stated that NASA also had active programs in this area.

The next research area about which the chairman inquired was the biological effects of positive and negative ions in closed atmospheres. General Talbot said that there was not much being done at the present time largely because good researchers had been scared away from the field because of the large number of quacks who were attempting to exploit it. Colonel Vorder Bruegge said that there was no overall integrated program to examine the biological effects of the entire electromagnetic spectrum and felt that this should be investigated.

Admiral Welham announced that this would be the last conference he would be able to attend since he was being transferred to the position of Fleet Surgeon on the staff of CINCPAC. Dr. McDonnell expressed the thanks of the group to Admiral Welham for his active and helpful participation in the meetings over the past year and wished him every success in his new assignment.

General Talbot reported briefly on a visit of a group of Air Force medical officers to the Army Aviation Center at Fort Rucker and expressed appreciation for the opportunity. Colonel Vorder Bruegge thanked him for the kind remarks and hoped others would visit also.

There being no further business the meeting was adjourned by the Chairman at 1130.

The next meeting will be held at 0900, 13 August 1964, in Room 3-D-1021, The Pentagon.



FREDERICK J. FRESE, JR.
Col, USAF MC
Executive Secretary, OAD-R

Enclosure

Info. Bulletin "Armed Forces Physicians' Appointment and Residency Consideration Program (Berry Plan)", July 64

Distribution:

Dr. Richard E. Benson, Office of Civil Defense, D/A
B/Gen R. E. Blount, MC, USA, AMR&DC, D/A
L/Col T. D. Boaz, OCRD, D/A
Col Jack Bollerud, USAF, MC, AFRST, D/AF
Dr. E. G. Fubini, ASD/DDDR&E
Col H. E. Griffin, MC, USA, ODASD/H&M, (OASD/M)
Dr. Wm W. Hammerschmidt, DSB, ODDR&E
Dr. Frank W. Hartman, AFMSPA, D/AF
Col T. E. Huber, OCRD-ARO, D/A
Dr. G. M. McDonnel, Univ of Calif Med Ctr
L/Col W. H. Meroney, USA, AMR&DC, D/A
L/Col Edwin Myers, AFRST, D/AF
R/Adm W. N. New, MC, USN, ODASD/H&M (OASD/M)
Captain J. A. O'Donoghue, MC USN, BuM&S, D/N
Captain J. P. Pollard, MC, USN, ONR, D/N
Captain C. E. Pruett, MC, USN, ODCNO(Dev), D/N
Dr. E. M. Reilley, AD-R, ODDR&E
L/Col R. E. Robards, AFRST, D/AF
Dr. C. W. Sherwin, DD/R&T, ODDR&E
B/General J. M. Talbot, USAF MC, AFMSPA, D/AF
Col C. F. Vorder Bruegge, MC, USA, AMR&DC, D/A
R/Adm W. Welham, MC, USN BuM&S, D/N



OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D. C. 20301

2 September 1964

MEMORANDUM FOR (See Distribution)

SUBJECT: Minutes of the Thirty-Seventh Joint Medical Research Conference

The following were present at the thirty-seventh conference in Room 3-D-1021, The Pentagon, 0900 - 1040, 13 August 1964:

B/Gen R. E. Blount, MC, USA, AMR&DC, D/A
L/Col T. D. Boaz, OCRD, D/A
Col Jack Bollerud, USAF, MC, AFRST, D/AF
Dr. F. J. Frese, Jr., OAD/R, ODDR&E
Col H. E. Griffin, MC, USA, ODASD/H&M, (OASD/M)
Dr. Frank W. Hartman, AFMSPA, D/AF
Col Donald L. Howie, MC, USA, AMR&DC, D/A
Dr. Carl Lamanna, ARO, D/A
Dr. Gerald M. McDonnel, Univ. of Calif. Med. Center, Chairman
L/Col Richard K. Miller, USAF, MC, AFMSPA, D/AF
Captain John A. O'Donoghue, MC, USN, BuM&S, D/N
Captain Joseph P. Pollard, MC, USN, ONR, D/N
Dr. Marion Sulzberger, AMR&DC, D/A (Guest)
B/Gen John M. Talbot, USAF, MC, AFMSPA, D/AF
Col Colin F. Vorder Bruegge, MC, USA, AMR&DC, D/A

The chairman, Dr. McDonnel, called the meeting to order. The minutes which had been distributed prior to the meeting, were accepted without amendment.

As an information item, General Blount reported on his recent trip to the Far East. He mentioned that construction of a new Clinical Research Center as part of the SEATO Medical Laboratory had been approved by the government of Thailand and that the ground breaking ceremony would take place before 1 September 1964. This facility will be jointly staffed by U. S. and Thai medical personnel; initially, the U. S. staff will come from the U. S. Army Medical Service, but invitations to participate are being extended to the Navy and the Air Force. General Blount also noted that at Kuala Lumpur (Malaysia) the laboratory has been much improved in its physical plant and its research program has recently been revitalized. He said that at the present time the biggest disease threat was from a severe hemorrhagic form of dengue, which carries a high mortality, especially among children.

Also as an information item, Dr. Frese reported on his visit to the Navy's Operation SEA LAB I, thirty miles offshore from Bermuda. At the time of his visit, four subjects including a Naval medical officer had been living

at an undersea depth of 192 feet for over four days. Although their living quarters were in the pressurized (86 psi, approximately 60% helium, 20% oxygen and 20% nitrogen) SEA LAB itself, they operated freely outside these quarters with nothing more than SCUBA gear, and occasionally for brief periods with nothing more than a face mask. The entire undersea operation is continually monitored by voice communication and closed circuit television. One especially interesting device was an electronic "voice-unscrambler" which changed the normally high-pitched "Donald Duck" speech in the helium enriched atmosphere to a readily intelligible form. The ability of man to adapt to living and working at these depths (and greater) holds great promise for all types of undersea activity.

Finally among information items, Dr. McDonnell reported on the July meeting of the DDR&E Advisory Panel on Medical and Biological Sciences which was held at the Aerospace Medical Division, Brooks AFB, Texas. He commented favorably upon the enthusiasm generated among the panel members by the new method of Panel operations; these included: more time for executive session discussion of DOD medical research problems; more freedom to visit laboratories of their choice, both during meetings and between meetings; and a direct, informal method of reporting to the chairman and/or executive secretary at frequent intervals.

Dr. Lamanna, choosing the devil's advocate role, asked what specifically could the Department of Defense and the Service laboratories expect to get from this revitalized Panel. After considerable discussion among the members, General Talbot summarized with the following ten points:

- (1) Under the new arrangements, the Panel members would be better informed on the Service laboratory programs and problems, and consequently better able to advise DDR&E.
- (2) The Panel will be in better position to help expand and build-up the DOD bio-medical research program.
- (3) By using the specialized interests and capabilities of the Panel members, their input to our research programs will be greater.
- (4) The Panel can provide to DDR&E advice which is not suspect of single Service interests.
- (5) The new procedures offer the possibility for the Panel members to offer technical advice at the "bench" level.
- (6) The Panel increases the size of the interface between military and civilian scientists in the bio-medical fields.
- (7) Such an expanded interface has potential pay-off in the matter of recruiting.
- (8) The specialized advice of the Panel can be available to the management level of the bio-medical research programs of the Services through the attendance of the latter at the Panel meetings.

- (9) Through the executive secretary's daily contacts with the management levels of the Services' programs, the Services can be kept constantly informed of the Panel's findings and recommendations.
- (10) If needed, the Panel members could be available for knowledgeable testimony before Congressional hearings in specific situations.

Dr. McDonnell commented that the failure to invite Service representatives to the last meeting of the Panel was because of the unique problems involved in reorganizing the Panel, and would in no way be considered a precedent.

The chairman next inquired as to the status of the recruiting efforts for research-type doctors under the revised Berry plan. Colonel Griffin responded that the reports from the field were not due until 1 October 1964.

As a related subject, Colonel Bollerud inquired as to the role and status of the MEND (Medical Education for National Defense) program at the medical schools. Colonel Griffin said that the MEND program was initiated some years ago as a substitute for ROTC in medical schools. From a trial effort in five schools, it has now expanded to where there is a MEND coordinator in every medical school. The quarterly symposia of these coordinators are held on a national basis, usually at one of the Service laboratories. In addition regional symposia, attended both by faculty and student bodies, are held frequently. These meetings are not primarily laboratory visits but are intended to supply material of interest to the military medical services which can be incorporated in the medical school curricula. Generally, this program has been considered a good public relations measure and a potential source of recruiting. MEND is purely a recipient of information from the Services and has no advisory function whatsoever.

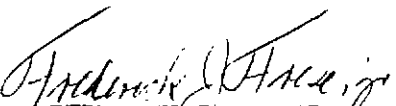
Dr. McDonnell pointed out to the conference that at the start of the meeting he had informed them what the Advisory Panel was planning and proposing to do under its charter. He would now like to solicit ideas as to what the conference members thought the Panel could and should do. Colonel Bollerud felt that the amount of help they could provide to individual laboratories would be limited because of the small number of laboratories any single Panel member could cover. Dr. Lamanna added his feeling that the brief visits of the Panel members to a laboratory would not be adequate for them to become thoroughly familiar with any one laboratory's program or problems. Captain Pollard likewise felt that the Panel members could not help much at the laboratory level, but that they would be a great help in support of research programs at the DDR&E level. Dr. Sulzberger countered that the Panelists need to visit the laboratories to acquire information on which to base their recommendations to DDR&E. Colonel Howie proposed that the Panel should first be thoroughly familiarized with the total DOD bio-medical research programs, and with the programs of each Service and how the individual laboratories fit into these programs; then their visits to the individual laboratories could achieve real significance. The majority of the conference supported

this view. Dr. McDonnell agreed that this seemed a sound approach and instructed the executive secretary to plan accordingly. He then invited the conference members to submit to him informally in writing any further ideas they had regarding the responsibilities and functions of the Advisory Panel.

Since Army is scheduled to host the next meeting of the Advisory Panel, the Walter Reed Army Institute of Research was tentatively selected as the site of the meeting. Service representatives will be invited.

There being no further business before the conference, it was adjourned by the chairman at 1040.

The next meeting of the Joint Medical Research Conference will be held at 0900, 10 September 1964, in Room 3-D-1021, The Pentagon.


FREDERICK J. FRESE, JR.
Col, USAF MC
Executive Secretary, OAD-R

Distribution:

Dr. Richard E. Benson, Office of Civil Defense, D/A
B/Gen R. E. Blount, MC, USA, AMR&DC, D/A
L/Col T. D. Boaz, OCRD, D/A
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Dr. Wm W. Hammerschmidt, DSB, ODDR&E
Dr. Frank W. Hartman, AFMSPA, D/AF
Col D. L. Howie, MC, USA, AMR&DC, D/A
Col T. E. Huber, OCRD-ARO, D/A
Dr. Carl Lamanna, ARO, OCRD, D/A
Dr. G. M. McDonnell, Univ. of Calif. Med. Center
L/Col R. K. Miller, USAF, MC, AFMSPA, D/AF
L/Col Edwin Myers, AFRST, D/AF
R/Adm W. N. New, MC, USN, ODASD/H&M (OASD/M)
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Dr. E. M. Reilley, AD-R, ODDR&E
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Dr. C. W. Sherwin, DD/R&T, ODDR&E
B/Gen J. M. Talbot, USAF, MC, AFMSPA, D/AF
Col C. F. Vorder Bruegge, MC, USA, AMR&DC, D/A



OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D. C. 20301

2 December 1964

MEMORANDUM FOR (See Distribution)

SUBJECT: Minutes of the Thirty-ninth Joint Medical Research Conference

The following were present at the thirty-ninth conference in Room 3-D-1021, The Pentagon, at 0900, on 8 October 1964:

B/General Robert E. Blount, MC, USA, AMR&DC, D/A
Col Jack Bollerud, USAF, MC, AFKST, D/AF
Cdr Charles E. Brodine, MC, USN, NMRI
Col Joseph D. Goldstein, MC, USA, AMR&DC, D/A
Dr. Frank W. Hartman, AFMSPA, D/AF
Col Gerald L. Hekhuis, USAF, MC, DASA
Col Donald L. Howie, MC, USA, AMR&DC, D/A
Dr. Carl Lamanna, OCRD-ARO, D/A
L/Col William T. Leslie, MC, USA, AMR&DC, D/A
Dr. Gerald M. McDonnel, The Center for Health Sciences, L.A., Chairman
L/Cdr Robert E. Meyer, MSC, USN, BuM&S, D/N
L/Col Richard K. Miller, USAF, MC, AFMSPA, D/AF
Maj John D. Mosely, USAF, VC, DASA
Capt John A. O'Donoghue, MC, USN, BuMED, D/N
Capt Joseph P. Pollard, MC, USN, ONR, D/N
Capt John R. Seal, MC, USN, NMRI, D/N
Col Colin F. Vorder Bruegge, MC, USA, AMR&DC, D/A

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The chairman, Dr. McDonnel, called the meeting to order at 0900. In the absence of the executive secretary, action on the minutes of the September meeting was deferred.

The first item on the agenda was the blood preservation program. Captain Pollard led off the discussion for the Navy by introducing Captain John Seal, NMRI.

Captain Seal distributed a paper setting out BuMed policy on Blood preservation. He pointed out that the Navy felt that there was a place for frozen blood; that blood preserved by the methods used at USN Laboratory, Chelsea, will serve as a standard to evaluate other preserved blood and that Chelsea will act as evaluator for other preserved blood.

He spoke of the change in the Protein Foundation's place in the program. Instead of having a contract from ONR, they will now have a service contract with Chelsea (USNH).

Captain Seal spoke of the disadvantage of the Cohn fractionator and the present use of the Cytoglomerator and the evaluation of this instrument. He described the Cytoglomerator, and mentioned nitrogen as the freezing agent and PVP as an additive. This method is a one-step method; that is, washing is not required. Its disadvantage is that PVP is not an accepted drug and the blood on thawing has too much free hemoglobin in it.

L/Cdr C. Brodine began his presentation by stating that the Navy Blood Program began in 1956 at Chelsea.

The advantage of freezing blood is to slow down the metabolic processes in the red blood cell. But freezing unfortunately damages the red blood cell. Adding glycerol protects the cell from damage. After thawing the glycerol must be washed out. 3507 units of frozen blood have been used at Chelsea on 1127 recipients.

Dr. Brodine spoke of the three kidney shutdown cases at Chelsea two years ago. This was due to the use of out-dated albumen as the suspension medium. He also spoke of the Huggins method using a Cytoglomerator. Huggins first used Dimethyl sulfoxide, but has now changed to the use of glycerol as an additive. Huggins has transfused 240 units of glycerolized blood and 133 units of dimethyl sulfoxide blood.

Cdr Brodine discussed the question of how long blood should be kept after thawing. For sterility reasons, blood is required to be used within 24 hours after thawing.

He also spoke of being able to keep frozen blood at -20° centigrade for six months, a practicable temperature in freezers on ships.

Cdr Brodine mentioned the disadvantage of the present frozen blood which requires 6 liters of wash solution for each unit of blood. He mentioned the possibility of making up wash solution in the field.

General discussion followed with questions asked as to Army's support of blood program. Army does not work on frozen blood; has research on extending life of blood in blood banks. Army supports blood program at something over \$100,000 per year.

Captain Pollard said that Navy's program has been about \$250,000 per year.

Dr. McDonnell asked Captain Pollard how much money he would like to spend on the blood program. Captain Pollard thought \$500,000 per year would be about right.

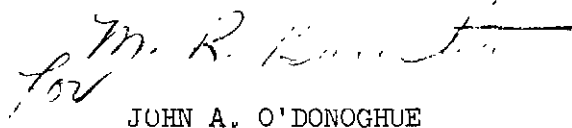
Dr. McDonnell asked Dr. Hartman about the Interdepartmental Blood Committee. This is a committee of many Government agencies with interest in blood, chaired by Dr. Fisk.

The question was raised by Dr. McDonnell on whether more money was needed in blood program and if so how it should be obtained. Question as to whether this should be increased in regular budget cycle or whether emergency funds should be sought. No definite decision was reached on this question.

In the discussion Captain Seal mentioned quick freeze methods of preserving blood. Dr. Brodine discussed this. These are methods in which blood is brought into contact through thin metal membranes with liquid nitrogen. These methods vary with different additives being used. Some methods wash out additive and some do not. In general these methods have too much free hemoglobin in the blood to use in severely shocked patients.

There being no further business before the conference, it was adjourned by the Chairman at 1100.

The next meeting of the Joint Medical Research Conference will be held at 0900, 12 November 1964, in the main conference room of the Walter Reed Army Institute of Research.

for 
JOHN A. O'DONOGHUE
Capt, MC USN, BuMed & Surgery
Acting Executive Secretary

2 Enclosures

1. Distribution List
2. BuM&S Policy on Blood Preservation

Distribution List

Dr. Charles G. Anderson, Office of Civil Defense, D/A
B/Gen R. E. Blount, MC, USA, AMR&DC, D/A
Col Jack Bollerud, AFRST, D/AF
Cdr Charles E. Brodine, MC, USN, NMRI
Dr. E. G. Fubini, ASD/DDDR&E
Col Joseph D. Goldstein, MC, USA, AMR&DC, D/A
Col H. E. Griffin, MC, USA, ODASD/H&M, (OASD/M)
Dr. Wm W. Hammerschmidt, DSB, ODDR&E
Dr. Frank W. Hartman, AFMSPA, D/AF
Col Gerald L. Hekhuis, USAF, MC, DASA
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Col Tyron E. Huber, OCRD-ARO, D/A
Dr. Carl Lamanna, OCRD-ARO, D/A
L/Col William T. Leslie, MC, USA, AMR&DC, D/A
Dr. G. M. McDonnel, The Center for Health Sciences, L.A.
L/Cdr Robert E. Meyer, MSC, USN, BuM&S, D/N
L/Col Richard K. Miller, USAF, MC, AFMSPA, D/AF
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L/Col Edwin Myers, AFRST, D/AF
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Capt C. E. Pruett, MC, USN, ODCNO(Dev), D/N
Dr. E. M. Reilley, AD-R, ODDR&E
L/Col R. E. Robards, AFRST, D/AF
Capt John R. Seal, MC, USN, NMRI, D/N
Dr. C. W. Sherwin, DD/R&T, ODDR&E
B/Gen J. M. Talbot, USAF, MC, AFMSPA, D/AF
Col C. F. Vorder Bruegge, MC, USA, AMR&DC, D/A

BUREAU OF MEDICINE AND SURGERY
POLICY ON BLOOD PRESERVATION

The Navy considers it has a requirement for preserved red blood cells as a supplement to ACD Blood. Preserved red cells will be particularly valuable in the following situations:

- a. as a reserve to meet emergency requirements.
- b. to provide adequate supply in areas where donors are scarce.
- c. to provide adequate supplies of rare types.
- d. as a reserve to meet the "holding type" naval operation such as Atlantic Fleet Operations during the Cuban missile crisis which will obviate the logistic problems of emergency procurement, shipping, and resupply of ACD Blood.

It has been adequately demonstrated that, using glycerol as an additive, red blood cells can be frozen and stored for long periods without significant loss of viability or function. After thawing and washing, these cells can be resuspended in a variety of suspension fluids and have been proven to be clinically acceptable and efficient.

Two processes for the addition and removal of glycerol to red blood cells are in advanced stages of development. One process, now in use at Chelsea Naval Hospital utilizing the Cohn Fractionator, is considered too complex and expensive for wide use in the Naval service. In its present setting it serves a useful purpose and the preserved products have been clinically proven to a degree to serve as a "standard" for preserved red blood cells. A second process, the Huggins' "Cytoglomerator", appears to have the inherent simplicity and flexibility which might enable its adoption by the Naval service at least as an interim method of red blood cell preservation. Further clinical trials are required under a variety of operational conditions to determine its potential usefulness, if the product can be shown to have the stability and safety of that produced with the Cohn Fractionator and to meet the requirements in the forthcoming NRC Committee on Blood and Transfusion Problems recommendations. Other processes are in various stages of development but have not as yet advanced to the point where they might be evaluated at Chelsea for possible Navy use.

The Union Carbide Corp., Linde Division, Liquid Nitrogen Process using poly vinylpyrrolidone as the protective additive is also in an advanced stage of development. Acceptance of this process for evaluation for possible Naval use will depend upon whether red blood cells so processed appear to meet the requirements of the forthcoming NRC Committee on Blood and Transfusion Problems recommendations.

This Bureau intends to seek additional funding for the exploratory development and evaluation of processes for the preservation of red blood cells in terms of feasibility, efficiency, safety, and cost effectiveness in the

military environment. This will be primarily an in-house effort, independent of the developers of various processes, and have at least in part the goal of engineering and other development to meet specific military requirements. The plans include:

a. the formalization of the Blood Research Laboratory at the Chelsea Naval Hospital as a facility whose mission includes its designation as the Central Navy Blood Process Evaluation Laboratory. The laboratory should operate as a facility under an Officer in Charge within the Naval Hospital, Chelsea, and be provided with billets for an adequate staff to meet its mission and with funding for the purpose.

b. the designation of certain other Naval Hospitals to participate in the evaluation of processes for the preservation of red blood cells after initial evaluation and clearance of the process at the Chelsea Laboratory.

c. the re-engineering or modification of processes to meet the specific needs of the fleet and amphibious forces with field testing of equipment and supplies.

Recognizing the needs for continuing basic research before the eventual optimum solution to all of the Navy's problems with blood preservation will be possible, it is also the intention of this Bureau to encourage and seek support for such research.



OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D. C. 20301

6 November 1964

MEMORANDUM FOR (See Distribution)

SUBJECT: Minutes of the Thirty-eighth Joint Medical Research Conference *212*

The following were present at the thirty-eighth conference in Room 3-D-1021, The Pentagon, 0900 - 1030, 10 September 1964:

Col Jack Bollerud, USAF, MC, AFRST, D/AF
Dr. Allan Forbes, OCRD, D/A
Dr. F. J. Frese, Jr., OAD/R, ODDR&E
Col H. E. Griffin, MC, USA, ODASD/H&M, (OASD/M)
Dr. F. W. Hartman, AFMSPA, D/AF
Col Donald L. Howie, MC, USA, AMR&DC, D/A
Maj John D. Moseley, USAF, DASA
Dr. Gerald M. McDonnell, The Center for Health Sciences, L.A.-Chairman
Capt J. A. O'Donoghue, MC, USN, BuM&S, D/N
Capt Carl E. Pruett, MC, USN, ODCNO/Dev, D/N
L/Col R. E. Robards, USAF, MC, AFRST, D/AF (part-time)
B/Gen J. M. Talbot, USAF, MC, AFMSPA, D/AF

RECORDS

The chairman, Dr. McDonnell, called the meeting to order. The minutes which had been distributed prior to the meeting, were accepted without amendment.

Dr. Frese reported the following items for information:

The Army Program Change Proposal (PCP) pertaining to increased personnel billets at a number of Army research laboratories was in the final stages of staffing in OSD and should be released shortly.

Certain FY 1965 medical research funds which had been deferred in the cases of the Army and the Navy have now been officially released.

The restructuring budget-wise of the medical research programs of the Army and Navy which had occasioned the deferral of funds mentioned above would not be required in the FY 1965 program, but would be insisted upon for the FY 1966 budget submittal.

The contract for ILSE (the information storage and retrieval system for abstracts of research projects which is used for coordination of NASA-DOD life sciences research programs) had been approved by the Life Sciences Sub-Panel of the AACB (Aeronautics & Astronautics Coordinating Board).

The unanticipated withdrawal of AID funds for the support of NAMRU-2 in FY 1965 has created a problem on which Navy and OSD are currently working.

Since the Executive Secretary will be out of the country at the time of the next meeting of this conference, the appointment of an Acting Executive Secretary will be required. (Dr. McDonnell appointed Captain O'Donoghue to this temporary position.)

Colonel Griffin gave the following report on the Berry Plan as it relates to the staffing of medical research billets:

There have been 6348 pamphlets and applications for military service distributed. These are all due to be returned by 1 October 1964. So far, there have been 2168 returned. For research billets, the Army has established a quota of 10, the Navy a quota of 2, and the Air Force no quota limit. Among the replies received to date, there have been only 3 applicants for research billets (all requesting Army), and 2 more probables.

Next year it is planned to distribute the pamphlets and applications by 1 May, with returns due by 1 August.

Dr. McDonnell thanked Dr. Griffin for his report and noted that the DDR&E would like reports from each Service as to the number of transferees from clinical specialties to research during the past year, as well as the total number of physicians presently engaged in research activities. The Service representatives agreed to supply this information to the Executive Secretary.

The Chairman asked the Executive Secretary to furnish to the Service representatives a roster of the members of the DDR&E Advisory Panel on the Medical and Biological Sciences as well as a breakdown geographically of the in-house medical research laboratories for which each Panel member has cognizance.

Colonel Howie gave the following report on the status of the Army's "Medical Research Program, S. E. Asia":

This project actually consists of a number of major projects under a single budget program element. Initially, many of these were done within the U. S. although their orientation was to the medical problems of S. E. Asia. Subsequently, a medical research laboratory has been established in Saigon, and the following programs are being initiated there: parasitology, cholera, drug-resistant malaria (although the final aspects of the latter must be done in the U. S.). In addition an ambitious psychiatry program was started in the field several months ago. Close ties are being maintained by the new laboratory with the laboratory at Kuala Lumpur and with SEATO laboratory at Bangkok. Liaison with NAMRU-2 and with the PACAF Epidemiological Flight are maintained on a more informal basis. It has become apparent that additional funds will be required to support the full scale development of this program. Some of these funds can be provided by reprogramming actions within the Army, but the balance will have to be sought from other sources.

Dr. McDonnell thanked Dr. Howie for his report.

General Talbot reported that the Air Force plans to respond to the NASA request for medical experiments to be included in the GEMINI and APOLLO flights.

The Chairman suggested as one agenda item for the November meeting a presentation on the current status of research on the biological effects of lasers.

There being no further business, the Chairman adjourned the meeting at 1030.

The next meeting of the Joint Medical Research Conference will be held at 0900, 8 October 1964, in Room 3-D-1021, The Pentagon.



FREDERICK J. FREESE, JR.
Col, USAF MC
Executive Secretary, OAD-R

Distribution:

Dr. Charles G. Anderson, Office of Civil Defense, D/A
B/Gen R. E. Blount, MC, USA, AMR&DC, D/A
Col Jack Bollerud, AFRST, D/AF
Dr. Allan Forbes, OCRD, D/A
Dr. E. G. Fubini, ASD/DDDR&E
Col H. E. Griffin, MC, USA, ODASD/H&M, (OASD/M)
Dr. Wm W. Hammerschmidt, DSB, ODDR&E
Dr. Frank W. Hartman, AFMSPA, D/AF
Col D. L. Howie, MC, USA, AMR&DC, D/A
Col T. E. Huber, OCRD-ARO, D/A
Dr. Carl Lamanna, OCRD-ARO, D/A
Dr. G. M. McDonnell, Los Angeles, Calif. Chairman
Maj John D. Moseley, USAF, DASA
L/Col Edwin Myers, AFRST
R/Adm W. N. New, MC, USN, ODASD/H&M (OASD/M)
Capt J. A. O'Donoghue, MC, USN, BuM&S, D/N
Capt J. P. Pollard, MC, USN, ONR, D/N
Capt C. E. Pruett, MC, USN, ODCNO(Dev), D/N
Dr. E. M. Reilley, AD-R, ODDR&E
L/Col R. E. Robards, AFRST, D/AF
Dr. C. W. Sherwin, DD/R&T, ODDR&E
B/Gen J. M. Talbot, USAF, MC, AFMSPA, D/AF
Col C. F. Vorder Bruegge, MC, USA, AMR&DC, D/A



OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D. C. 20301

2 December 1964

MEMORANDUM FOR (See Distribution)

SUBJECT: Minutes of the Thirty-ninth Joint Medical Research Conference

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The following were present at the thirty-ninth conference in Room 3-D-1021, The Pentagon, at 0900, on 8 October 1964:

B/General Robert E. Blount, MC, USA, AMR&DC, D/A
Col Jack Bollerud, USAF, MC, AFRST, D/AF
Cdr Charles E. Brodine, MC, USN, NMRI
Col Joseph D. Goldstein, MC, USA, AMR&DC, D/A
Dr. Frank W. Hartman, AFMSPA, D/AF
Col Gerald L. Hekhuis, USAF, MC, DASA
Col Donald L. Howie, MC, USA, AMR&DC, D/A
Dr. Carl Lamanna, OCRD-ARO, D/A
L/Col William T. Leslie, MC, USA, AMR&DC, D/A
Dr. Gerald M. McDonnell, The Center for Health Sciences, L.A., Chairman
L/Cdr Robert E. Meyer, MSC, USN, BuM&S, D/N
L/Col Richard K. Miller, USAF, MC, AFMSPA, D/AF
Maj John D. Mosely, USAF, VC, DASA
Capt John A. O'Donoghue, MC, USN, BuMED, D/N
Capt Joseph P. Pollard, MC, USN, ONR, D/N
Capt John R. Seal, MC, USN, NMRI, D/N
Col Colin F. Vorder Bruegge, MC, USA, AMR&DC, D/A

The chairman, Dr. McDonnell, called the meeting to order at 0900. In the absence of the executive secretary, action on the minutes of the September meeting was deferred.

The first item on the agenda was the blood preservation program. Captain Pollard led off the discussion for the Navy by introducing Captain John Seal, NMRI.

Captain Seal distributed a paper setting out BuMed policy on Blood preservation. He pointed out that the Navy felt that there was a place for frozen blood; that blood preserved by the methods used at USN Laboratory, Chelsea, will serve as a standard to evaluate other preserved blood and that Chelsea will act as evaluator for other preserved blood.

He spoke of the change in the Protein Foundation's place in the program. Instead of having a contract from ONR, they will now have a service contract with Chelsea (USNH).

Captain Seal spoke of the disadvantage of the Cohn fractionator and the present use of the Cytoglomerator and the evaluation of this instrument. He described the Cytoglomerator, and mentioned nitrogen as the freezing agent and PVP as an additive. This method is a one-step method; that is, washing is not required. Its disadvantage is that PVP is not an accepted drug and the blood on thawing has too much free hemoglobin in it.

Lt/Cdr C. Brodine began his presentation by stating that the Navy Blood Program began in 1956 at Chelsea.

The advantage of freezing blood is to slow down the metabolic processes in the red blood cell. But freezing unfortunately damages the red blood cell. Adding glycerol protects the cell from damage. After thawing the glycerol must be washed out. 3507 units of frozen blood have been used at Chelsea on 1127 recipients.

Dr. Brodine spoke of the three kidney shutdown cases at Chelsea two years ago. This was due to the use of out-dated albumen as the suspension medium. He also spoke of the Huggins method using a Cytoglomerator. Huggins first used Dimethyl sulfoxide, but has now changed to the use of glycerol as an additive. Huggins has transfused 240 units of glycerolized blood and 133 units of dimethyl sulfoxide blood.

Cdr Brodine discussed the question of how long blood should be kept after thawing. For sterility reasons, blood is required to be used within 24 hours after thawing.

He also spoke of being able to keep frozen blood at -20° centigrade for six months, a practicable temperature in freezers on ships.

Cdr Brodine mentioned the disadvantage of the present frozen blood which requires 6 liters of wash solution for each unit of blood. He mentioned the possibility of making up wash solution in the field.

General discussion followed with questions asked as to Army's support of blood program. Army does not work on frozen blood; has research on extending life of blood in blood banks. Army supports blood program at something over \$100,000 per year.

Captain Pollard said that Navy's program has been about \$250,000 per year.

Dr. McDonnell asked Captain Pollard how much money he would like to spend on the blood program. Captain Pollard thought \$500,000 per year would be about right.

Dr. McDonnell asked Dr. Hartman about the Interdepartmental Blood Committee. This is a committee of many Government agencies with interest in blood, chaired by Dr. Fisk.

The question was raised by Dr. McDonnell on whether more money was needed in blood program and if so how it should be obtained. Question as to whether this should be increased in regular budget cycle or whether emergency funds should be sought. No definite decision was reached on this question.

In the discussion Captain Seal mentioned quick freeze methods of preserving blood. Dr. Brodine discussed this. These are methods in which blood is brought into contact through thin metal membranes with liquid nitrogen. These methods vary with different additives being used. Some methods wash out additive and some do not. In general these methods have too much free hemoglobin in the blood to use in severely shocked patients.

There being no further business before the conference, it was adjourned by the Chairman at 1100.

The next meeting of the Joint Medical Research Conference will be held at 0900, 12 November 1964, in the main conference room of the Walter Reed Army Institute of Research.

for *M. R. Brodine*

JOHN A. O'DONOGHUE
Capt, MC USN, BuMed & Surgery
Acting Executive Secretary

2 Enclosures

1. Distribution List
2. BuM&S Policy on Blood Preservation

Distribution List

Dr. Charles G. Anderson, Office of Civil Defense, D/A
B/Gen R. E. Blount, MC, USA, AMR&DC, D/A
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Col C. F. Vorder Bruegge, MC, USA, AMR&DC, D/A

BUREAU OF MEDICINE AND SURGERY
POLICY ON BLOOD PRESERVATION

The Navy considers it has a requirement for preserved red blood cells as a supplement to ACD Blood. Preserved red cells will be particularly valuable in the following situations:

- a. as a reserve to meet emergency requirements.
- b. to provide adequate supply in areas where donors are scarce.
- c. to provide adequate supplies of rare types.
- d. as a reserve to meet the "holding type" naval operation such as Atlantic Fleet Operations during the Cuban missile crisis which will obviate the logistic problems of emergency procurement, shipping, and resupply of ACD Blood.

It has been adequately demonstrated that, using glycerol as an additive, red blood cells can be frozen and stored for long periods without significant loss of viability or function. After thawing and washing, these cells can be resuspended in a variety of suspension fluids and have been proven to be clinically acceptable and efficient.

Two processes for the addition and removal of glycerol to red blood cells are in advanced stages of development. One process, now in use at Chelsea Naval Hospital utilizing the Cohn Fractionator, is considered too complex and expensive for wide use in the Naval service. In its present setting it serves a useful purpose and the preserved products have been clinically proven to a degree to serve as a "standard" for preserved red blood cells. A second process, the Huggins' "Cytoglomerator", appears to have the inherent simplicity and flexibility which might enable its adoption by the Naval service at least as an interim method of red blood cell preservation. Further clinical trials are required under a variety of operational conditions to determine its potential usefulness, if the product can be shown to have the stability and safety of that produced with the Cohn Fractionator and to meet the requirements in the forthcoming NRC Committee on Blood and Transfusion Problems recommendations. Other processes are in various stages of development but have not as yet advanced to the point where they might be evaluated at Chelsea for possible Navy use.

The Union Carbide Corp., Linde Division, Liquid Nitrogen Process using poly vinylpyrrolidone as the protective additive is also in an advanced stage of development. Acceptance of this process for evaluation for possible Naval use will depend upon whether red blood cells so processed appear to meet the requirements of the forthcoming NRC Committee on Blood and Transfusion Problems recommendations.

This Bureau intends to seek additional funding for the exploratory development and evaluation of processes for the preservation of red blood cells in terms of feasibility, efficiency, safety, and cost effectiveness in the

military environment. This will be primarily an in-house effort, independent of the developers of various processes, and have at least in part the goal of engineering and other development to meet specific military requirements. The plans include:

a. the formalization of the Blood Research Laboratory at the Chelsea Naval Hospital as a facility whose mission includes its designation as the Central Navy Blood Process Evaluation Laboratory. The laboratory should operate as a facility under an Officer in Charge within the Naval Hospital, Chelsea, and be provided with billets for an adequate staff to meet its mission and with funding for the purpose.

b. the designation of certain other Naval Hospitals to participate in the evaluation of processes for the preservation of red blood cells after initial evaluation and clearance of the process at the Chelsea Laboratory.

c. the re-engineering or modification of processes to meet the specific needs of the fleet and amphibious forces with field testing of equipment and supplies.

Recognizing the needs for continuing basic research before the eventual optimum solution to all of the Navy's problems with blood preservation will be possible, it is also the intention of this Bureau to encourage and seek support for such research.