

THE DEVELOPMENT AND ORGANISATION OF THE ARMY BLOOD BANK IN CYPRUS, AUGUST, 1955—AUGUST, 1956

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BEFORE August, 1955, there was no organised military blood bank in Cyprus. The B.M.H. Cyprus in Nicosia was a hospital with 200 equipped beds, which were increased in July, 1955, to 270, but the number of patients in the hospital averaged only 80-90. It was therefore thought unnecessary to maintain a blood bank in the hospital.

During this time a donor panel of troops in the island was maintained ranging from 100 to 200 donors. The approximate number of troops on the island in August, 1955, was 8,000-9,000. A blood bank was maintained at the civilian hospital in Nicosia, but this was not used by the army although when it was first formed military donors were often bled.

Two factors led to the necessity for keeping an army blood bank. The first was the move of troops to Cyprus from the Suez Canal Zone base and the second was the internal security situation as a result of terrorist activity on the island. From the 28th August, 1955, a small bank of 4 pints of blood was kept in a 3 cubic foot domestic refrigerator. At first 2 pints of Group O Rhesus positive and 2 pints of Group A Rh positive blood were held, but this was soon modified to 3 pints of Group O Rh positive and 1 pint of Group A Rh positive. The demand for blood in the B.M.H. was still not very great. During August, 1955, only 3 pints of blood were used in the hospital.

THE DONOR PANEL

By the end of September, 1955, there were 320 donors on the panel, which was then in the process of being reorganised. The names were kept on a card index system, each donor having a card giving his number, rank, name, unit, location, blood group and "R.H.E." date.

The panel was divided into the units outside Nicosia which provided 150 donors, the units within Nicosia which provided 121 donors, and the local hospital panel of 42 donors. The units outside Nicosia were used for routine stocking of the blood bank, and they required twenty-four hours' notice to get donors up to the hospital. The units within Nicosia were reserved for emergencies

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when the bank was exhausted. The B.M.H. panel was reserved for acute emergencies, especially those occurring in the middle of the night.

Each donor not already holding a National Blood Transfusion Service card was ABO grouped and Rhesus grouped with anti-D serum. All D negative donors were regrouped with anti C plus D and anti E sera. They were all Kahn tested. Rh negative donors were only accepted if shown to be phenotype *cde*. By the end of July, 1956, the number of donors on the panel was 1,636, of which 786 were located outside Nicosia, 682 within Nicosia, and 168 were on the local hospital panel.

THE FIRST THREE-MONTH PERIOD

During the first month of the life of the bank, 8 pints of blood were used, mainly for maternity and routine surgical cases. It was not until the end of October, 1955, that severe casualties, needing massive transfusion, occurred. These consisted of two groups—road accidents, and bomb and gunshot injuries as a result of terrorist activities.

The first severe and fatal terrorist casualty occurred at Paphos, 100 miles from Nicosia, on 27th October, 1955, and 5 pints of blood were flown out by helicopter from the B.M.H. Nicosia immediately. At this time it was considered necessary to increase the bank's holding to 5 pints, 4 pints of Group O Rh positive and 1 pint of Group A Rh positive. The donor panel was also increased to 500 donors, with an emphasis on units stationed in and around Nicosia. This was made easier by the increased concentration of troops on the island.

During the third month of the life of the bank 29 pints of blood were issued. By this time terrorist activity was starting seriously.

SITE AND STAFF

The bank was held in the laboratory of the B.M.H. Nicosia, originally in a main room but later in a side room away from the main laboratory. The original refrigerator was augmented by a further 4.7 cubic foot refrigerator and the temperature was controlled at 4° C., using maximum and minimum thermometers and keeping a daily record of the readings.

Donors were originally bled in the wards, but later two beds were placed in a room in the laboratory for this purpose. The bank was run by the hospital pathologist, who had a staff of three technicians for all duties. In October two more technicians were posted from the Central Medical Laboratory in Fayid to assist in increasing the donor panel.

At the end of November, 1955, the Central Medical Laboratory was transferred from Fayid into the premises occupied by the laboratory of the B.M.H. Nicosia, absorbing its staff to form the new Command Medical Laboratory. The bank then came under the direct supervision of the Assistant Director of Pathology, M.E.L.F. At this time one technician was employed full time on serology and blood bank duties; occasionally, when the pressure of work increased, he was assisted by a further technician.

BLOOD HELD

After February, 1956, it was considered necessary to keep 10-15 pints of Group O Rh positive and 3 pints of Group A Rh positive blood in the bank to meet emergencies. Before a week-end the bank was generally built up to 20 pints of O Rh positive and 5 of A Rh positive. If Rh negative blood was needed, donors had to be summoned from the immediate neighbourhood. The Rh negative panel was considered to be too small to allow the routine keeping of Rh negative blood in the bank. A similar procedure was adopted for Group AB and B patients.

As far as possible blood of homologous ABO group was issued. However, in an emergency if homologous blood was not available Group O blood was issued until donors of the homologous group could be obtained and bled. Rh positive blood was never issued to Rh negative recipients except in very extreme emergencies. There were always Rh negative donors standing by in the hospital who could be bled on the spot and meet the needs of the case until further donors could be obtained from the immediate vicinity. As far as possible blood was always issued after cross-matching. Uncross-matched blood had only to be issued on a small number of occasions, as it took no longer than twenty minutes to perform a rapid tube-centrifuge test in saline and albumen.

MASSIVE TRANSFUSIONS

On a number of isolated occasions it had been found necessary to issue large amounts of blood over a short period, for severely injured patients. Over a twenty-four-hour period in April, 48 donors were bled and 42 pints of blood were issued. In another period of seven hours, 42 donors had to be bled for cases admitted when a bomb had been thrown into a vehicle.

To meet this type of situation a "Crash emergency" system was organised. The three pathologists on the establishment of the Command Medical Laboratory were alerted. Two organised and bled the donors while the third supervised the cross-matching of blood. One technician stayed by the bank, two assisted with the bleeding of donors, another assisted in the marshalling of donors and the supply of refreshment. Two technicians were employed in checking the group and cross-matching of blood. On these occasions all other laboratory activities temporarily ceased. Of 100 patients transfused during the year, 26 needed over 5 pints of blood, 11 over 10 pints and 5 had 20 pints or over. During the whole period there were no reactions attributable to the transfusion of incompatible blood.

ORGANISATION OF DONORS

Two methods were used to organise new donors. In the first, direct contact was made between the pathologist and the unit medical officer to appeal for new donors within his unit. In the second, the District A.D.M.S. was approached and a District routine order was published explaining the need for donors. In

the latter case, the O.C. unit would then approach the laboratory, giving a nominal roll of donors in his unit.

In both cases arrangements were then made for a pathologist to visit the unit and take samples of blood for grouping and Kahn testing from those prospective donors who did not already hold National Blood Transfusion Service cards. It was found impracticable to take more than 100 samples at a time in one of these sessions, due to the clerical errors that might occur with larger groups. A lot of work would have been saved if every soldier had been grouped by the National Blood Transfusion Service during preliminary training at his regimental or corps depot in the United Kingdom.

Owing to the fluid state of personnel due to posting and National Service release, the panel had to be reviewed every month and the cards of those who had left the island discarded. Efforts to recruit new donors therefore had to be continuous and a target of 150 new donors a month maintained, to keep the panel at 10 per cent of the population available.

WASTAGE

There was an inevitable wastage of blood owing to the time expiry factor. Three weeks was regarded as the optimum life of the blood. Approximately 420 ml. was taken into 120 ml. of 1.66 per cent disodium citrate with 2.5 per cent glucose in distilled water (A.C.D.). After three weeks the blood was kept for a further week in a separate refrigerator when it was available for "in and out" transfusions. If not used at the end of this week it was given to the bacteriology department for making media. The wastage was never reduced below 10 per cent and was due to clinicians expecting to use more of the rarer group blood than they did, and the estimated monthly use of blood falling below that expected.

Table 1. *Monthly issue of blood by the bank in pints*

August, 1955	...	...	...	...	...	...	...	3
September	...	...	...	...	...	...	...	8
October	...	...	...	...	...	...	...	16
November	...	...	...	...	...	...	...	24
December	...	...	...	...	...	...	...	29
January, 1956	16
February	54
March	52
April	54
May	125
June	90
July	35
Total	506

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