INQUESTS ON FIVE PERSONS WHO DIED AFTER BLOOD TRANSFUSION

Inquests held at Cape Town on 3, 8 and 17 March 1956 at Magistrates Court Cape Town before Mr. J. H. Basson, additional magistrate, assisted by Dr. R. J. Smit, Chief Regional Health Officer, Cape Town, as medical assessor, on five persons who died after blood transfusions.

VERDICT

The Court finds:

1. That the causes of death of the deceased persons were as follows:

(*a*) Andrew Levy, Coloured male aged 68 years, who died in Groote Schuur Hospital. Death due to infective gangrene of the right foot associated with pulmonary tuberculosis and bronchiectasis and precipitated by a reaction to a transfusion with bacterially contaminated blood administered as pre-operative treatment for the gangrenous foot.

(*b*) Louis Saddington, European female aged 55 years, who died in Groote Schuur Hospital. Death due to shock caused by transfusion with bacterially contaminated blood administered as pre-operative treatment for carcinoma of the cervix uteri.

(*c*) Frances Sarah Moses, Coloured female aged 36 years, who died in Groote Schuur Hospital. Death due to septicaemia and shock caused by transfusion with bacterially contaminated blood administered as pre-operative treatment for an abdominal pain of undiagnosed origin.

(*d*) Maria Stemmet, Coloured female aged 37 years who died in the Peninsula Maternity Hospital. Death due to post partum haemorrhage from a ruptured uterus following upon delivery of a full term infant and associated with toxaemia of pregnancy. Death was precipitated by shock from blood transfusions with bacterially contaminated blood administered for an emergency surgical operation to control the uterine bleeding.

(*e*) Laura M. C. Schenk, European female aged 63 years, who died in Conradie Hospital. Death due to shock following upon transfusion with bacterially contaminated blood administered for the immediate post-operation treatment of a total gastrectomy operation for carcinoma of the stomach. Deceased was also suffering from high blood pressure and a post operative generalized plastic peritonitis.

THE CAUSES OF CONTAMINATION

2. That the causes for the contamination of the blood were as follows:

The anti-coagulent salt solution which was added to the pilot tubes had become accidentally contaminated with aerogenes coliform bacteria, presumably when it was in the stock bottle. These pilot tubes are attached to the blood bottles to contain samples of the donor's blood for carrying out necessary pre-transfusion cross matching tests against the patients' blood so as to make certain that the two bloods are compatible. These pilot tubes are not sterilized by the laboratory which has never claimed to do so. The tubes are not sterilized because of practical technical difficulties in attempting to do so, e.g. blowing of the corks and evaporation of the anti-coagulent fluid on heating.

The blood samples are normally collected into the pilot tubes after the blood from the donors has been collected into the bottles. With this procedure there is thus no danger of the blood in the bottles being contaminated from the pilot tubes. Chiefly because of complaints that the samples of blood in the pilot tubes often contained small clots rendering the interpretation of the pre-transfusion cross matching tests difficult, Dr. E. Weller, medical officer to the Western Province Blood Transfusion Service, decided to modify the technique for collecting blood so that the pilot tubes were filled before filling the bottles. As a result of this new procedure, it has now become apparent that the needles on the far ends of the taking sets become contaminated with the infected anti-coagulent solution in the pilot tubes and that this infection was then transferred by the needle to the donors' blood as the latter was run into the bottles.

The Court wishes to add the following riders to its findings:

1. Though Dr. E. Weller was responsible for the modification in the technique for collecting the donors' blood, whereby this blood became dangerously infected with bacteria, the Court is of the opinion that she cannot fairly be held to have been medically negligent for the following reasons:

(*a*) She volunteered her evidence and gave it fully and frankly so that it became quite clear to the Court that in modifying the technique for collecting the blood; she made, in good faith, an error of judgment.

(*b*) She made the change in technique because it appeared to her to be the best way of obviating the complaints that the blood samples in the pilot tubes contained clots and also because this procedure would overcome many of the difficulties she was experiencing with untrained and often unskilled lay assistants.

(*c*) She was reliably informed that this method of first collecting the samples of blood into the pilot tubes had

been long practised by the South African Blood Transfusion Service with apparent success and saftey.

(*d*) She stated that she consulted a private pathologist who was a member of the Medical Advisory Subcommittee of the Service and that he had unreservedly approved of the proposed plan; and

(*e*) She had also some two to three months prior to the accidents consulted Dr. M. C. Botha, the pathologist in charge of the Cape Provincial Blood Transfusion Laboratory. Dr. Botha had then informed her that, as the pilot tubes were not sterile, he was not in favour of the proposed change in the technique. He, however, advised her that he intended at some unspecified time in the future to attempt to sterilize these tubes and he gave her to understand that, if the pilot tubes were sterilized, there would be no objection to following the procedure that she suggested.

Shortly before she modified the technique, Dr. Weller was informed by the technical officer at the laboratory, who was in charge of the sterilizing, that he could not that day provide her with pilot tubes as they were in the hot air oven. As it is an established practice for bacteriologists to sterilize certain laboratory glassware by heating it in hot air ovens, Dr. Weller concluded from this information that the pilot tubes were now being sterilized by the laboratory. This was, however, an erroneous conclusion on her part as the tubes were not being sterilized but merely dried in the oven after cleansing.

CHECK ON REACTIONS

2. The Court was perturbed at the apparent laxity amongst some medical practitioners, including the resident staff of Groote Schuur Hospital, in promptly reporting serious blood transfusion reactions to the Service and also in rendering returns to it in regard to all bottles of blood administered to patients. The Service, as is orthodox procedure with other blood transfusion services, requires these reports and returns to be made so that it can keep an effective check on its safety precautions and immediately investigate and rectify any complaints due to apparent faults with the blood. In a printed leaflet of instructions which accompanies every bottle of blood issued by the Service, a request is made to medical practitioners to report all reactions in patients with the minimum of delay and to make returns, in the printed forms supplied with the bottles, as to the result obtained with all bottles of blood administered to patients whether or not reactions occur.

It is obviously in the interests of the medical profession as well as in the interests of the Service and the general public that these reasonable requests should be readily and timeously complied with by doctors and that the medical staffs of public hospitals in particular should thus cooperate with the Service.

The Court noted that, whereas the actual administration of blood to patients in the Groote Schuur Hospital was entrusted to internes, it was more senior members of the staff, e.g. registrars, who were normally responsible for ordering and supervising blood transfusions. Whatever internal arrangements the hospital may make for the reporting of reactions for investigations by its own pathologists, the Court is of the opinion that the onus for reporting serious reactions promptly and directly to the Service and for deciding what reactions are sufficiently serious to warrant such urgent reporting should rest with the responsible registrars and not the internes. The former should also, as supervising officers, be responsible for ensuring that the returns required by the Service on all bottles administered are rendered accurately and timeously to the Service by the latter.

The resident pathologist of the Groote Schuur Hospital appears to have acted efficiently and conscientiously in regard to the laboratory investigations of the reactions as soon as it became apparent to him that the hospital was experiencing an unduly large number. The Medical Superintendent of Groote Schuur Hospital also acted wisely in immediately closing the hospital blood bank when the resident pathologist reported to him that the reactions had become dangerous in character. The Court, however feels that the Medical Superintendent should also have promptly advised an official of the Blood Transfusion Service of the position as soon as he realized that it was sufficiently serious as to warrant the emergency closure of the hospital bank, even though the causes of the reactions at that stage were unknown.

3. As soon as the serious reactions were reported to the Western Province Blood Transfusion Service, this Service immediately closed its master and subsidiary blood banks, stopped the issue of all blood and recalled all unused bottles of blood still on issue. Also, as soon as the mode of contamination was suspected, it gave immediate instructions that the previous technique for collecting blood, whereby the pilot test tubes were filled after the bottles, was to be strictly adhered to in future.

Though these unfortunate blood transfusion accidents led to several sad fatalities, the Court finds that they occurred under unusual circumstances and are most unlikely to be repeated in the future. The general public confidence in the Western Province Blood Transfusion Service should, therefore, be reassured and it should be borne in mind that the Service, over the last eighteen years, has rendered valuable service, through its unpaid voluntary donors, in saving many lives and in alleviating much suffering. Also its records indicate that this Service in the past has been conducted with great efficiency and safety and there is every reason to believe with confidence that it will long continue to be so.

The Court wishes to stress the very great need for the closest possible co-operation between all bodies concerned in providing blood transfusion services, viz: the donor section responsible for providing the blood, the technical sections responsible for collecting and testing the blood and the clinical sections responsible for its administration to patients.

Finally the Court understands that, under section 30 of Act No. 29 of 1954, which amends section 83 of the Medical, Dental and Pharmacy Act No. 13 of 1929, the Union Department of Health has drafted comprehensive regulations to control the activitites of blood donor services with special reference to their safe and efficient operation.

In keeping with a promise made by the previous Honourable the Minister for Health, the various blood transfusion services in the Union are at present being consulted on the suitability and practicability of these regulations before they are finally promulgated which, it is hoped, will be at some time in the near future.