Discussed with TED
with whose figures I agree
[initials] 9/6/76

Dr Waiter

AHG FACTOR VIII PRODUCTION

1. At the meeting of the Expert Group on the treatment of haemophilia, the view was advanced that by mid-1977, when the current production target was achieved, the NHS supply of Factor VIII availability (to use Mr Watts' term) might be of the order of 31-34 million iu made up of 12-15 million iu of concentrate (E & W), 15 million iu as cryoprecipitate (E & W) and 4 million iu Factor VIII availability (Scotland). Dr Stratton questioned the cryoprecipitate figure since he believed that the production of cryoprecipitate was to be phased out completely. It was explained that it was never intended to phase out cryoprecipitate completely but he was right in believing that the Factor VIII production programme provides for the output of cryoprecipitate to be reduced as freeze dried concentrate production rises or more accurately, donations are switched from cryoprecipitate production to freeze dried concentrate production as capacity rises.

2. As shown in the attached table, the target figures for England and Wales were cryoprecipitate 100,000 donations and freeze dried concentrate 275,000 donations which, according to the rough and ready calculations below are likely to yield far fewer international units of Factor VIII actively than will be needed if the forecasts of the experts are to be met from NHS produced material. The experts were, of course, looking ahead a great deal and one important assumption was that within the next 5 years there would be nearly 1200 severe haemophiliacs on home treatment.

3. I have attempted below to convert the current 'target' from donations to international units of Factor VIII actively since it is the latter that clinicians concerned with treatment are interested in. You will recall that I suggested at the meeting that we should, as a cross check, examine the clinicians' ideas of targets in terms of donations but the idea was not taken up. Regional Transfusion Directors will continue to be concerned with donations because this is the unit in which the 'raw material' is collected. The figures below will require some attention since I have had to make several assumptions not all of which may be correct. I appreciate that Dr Maycock may have all the figures worked out but it is a useful exercise for me to try to see what is involved and if my calculations are even approximately correct they demonstrate that by mid-1977 output will be very much below the 31-35 million iu figure discussed at the meeting of experts.

Calculation

Mid-1977 target : 100,000 donations devoted to cryo production
275,000 " " " freeze dried concentrate production

Assume

(a) that after the cryoprecipitate is prepared, the remaining 'mother liquid' is further fractionated for Factor VIII and that the total yield is equal to that of plasma from which cryoprecipitate is not separated first. (I appreciate that this is unlikely but any other assumption must reduce the total output figure shown below).

(b) 250 iu of Factor VIII activity are obtained from 6 donations of blood.

Yield from 100,000 donations made into cryoprecipitate

$$\frac{100{,}000 \times 250}{6} = 4{,}166{,}670 \text{ iu or some lower figure depending on yield.}$$

Yield from 275,000 donations made into freeze dried concentrate

$$\frac{275{,}000 \times 250}{6} = 11{,}458{,}330 \text{ iu}$$

Total : 15,625,000 iu *

T E DUTTON
HS2A

26 May 1976

Dr Maycock ✓
cc Mr Draper
Mr Cleasby

* I gave figure of about 14 M iu to Eldtree + Oxford annually at meet a 11/3/76. This is from blood intake of about 330,000 donations.