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## Vitamin K prophylaxis against haemorrhagic disease of the newborn in the United Kingdom

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In the 1950s it became widespread practice to give vitamin K prophylactically to protect neonates against haemorrhagic disease of the newborn.<sup>1</sup> The finding of an association between use of vitamin K<sub>3</sub> and kernicterus in premature babies in the 1960s was a setback. Vitamin K<sub>1</sub> was safe in this respect but the rarity of haemorrhagic disease of the newborn, the trauma of intramuscular injections, and the cost of treating all babies have been the cause of continuing debate.<sup>2</sup> Some paediatricians maintain that the only safe practice is to give intramuscular vitamin K to all babies, others that oral vitamin K suffices in those at low risk for haemorrhagic disease of the newborn, and a minority that this second group needs no prophylaxis at all.

The aims of this study were to document current patterns of prophylaxis policy in Great Britain and Northern Ireland, recording recent changes and determining the reasons for these changes.

### Methods and results

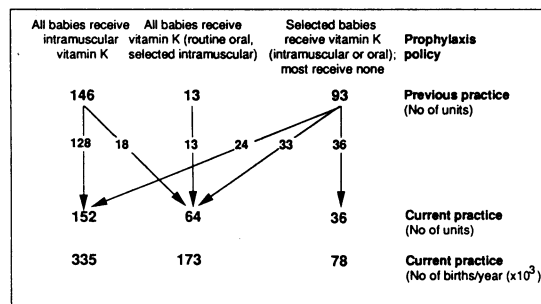
In 1988 a questionnaire was sent to each special care baby unit in the United Kingdom (as listed by the Neonatal Nurses' Association) requesting information about policies of prophylaxis in each maternity unit they served, aimed at including all maternity unit deliveries. We asked which babies received prophylaxis, the route of administration, the dose, whether repeat doses were given, whether changes in policy had been made since 1982 and, if so, why. The total number of yearly deliveries in the catchment of each unit was established. Replies were received from 278 (87%) of identified units. Excluding tertiary referral units we received data from 255 units accounting for roughly 592 000 deliveries a year (three quarters of all deliveries).

All units gave vitamin K (phytomenadione) to all or selected babies either intramuscularly, orally, or rarely, intravenously. Of 219 units that gave all babies vitamin K, in 152 this was by intramuscular injection. Sixty seven units gave oral vitamin K routinely, and in 64 of these, babies considered at high risk received vitamin K intramuscularly; in one unit babies considered to be at high risk received vitamin K intravenously. Thirty six units gave vitamin K only to selected babies considered to be at high risk (33 intramuscular, three oral vitamin K). One hundred and fifteen units gave supplementary doses to high risk babies.

Since 1982 there had been a shift towards a policy of prophylaxis for all babies and from intramuscular to oral administration as routine (figure). A total of 220

units gave 1 mg vitamin K orally or intramuscularly. Other doses for routine prophylaxis were: intramuscular 0.5 mg (17 units) and 0.25 mg (two); oral 0.5 mg (three), 0.25 mg (two), and 2.0 mg (one). Eighty one units reduced the dose for preterm and low birth-weight babies.

Reports of haemorrhagic disease of the newborn were the main reason for changing to a policy of prophylaxis for all. Oral administration was increasingly used because of awareness that vitamin K is well absorbed by this route,<sup>3</sup> concern about inadvertent use of intramuscular ergometrine-oxytocin, and general reluctance to give intramuscular injections.



Changes in policy for vitamin K prophylaxis in special care baby units in United Kingdom

### Comment

All special care baby units give vitamin K to at least some babies; 510 000 (86%) babies a year were born in units where all received intramuscular or oral vitamin K.

A total of 78 000 (13%) babies were born in units where most received no vitamin K and a small minority of high risk infants were selected to receive vitamin K. Very few units selected for prophylaxis babies who were breast fed or whose mothers took anticonvulsant or antituberculous drugs during pregnancy, although these are recognised risk factors for haemorrhagic disease of the newborn. Thus around 13% of breast fed babies born in the United Kingdom do not receive vitamin K. These babies are at risk of developing haemorrhagic disease of the newborn.<sup>4</sup>

Since 1982 routine prophylaxis has become more widespread and the use of oral vitamin K has increased. Subcutaneous administration of vitamin K, which gives comparable blood concentrations to intramuscular administration, is not practised in the United Kingdom. The preparation for oral or subcutaneous administration (Konaktion) is not licensed for administration by these routes in the United Kingdom.

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