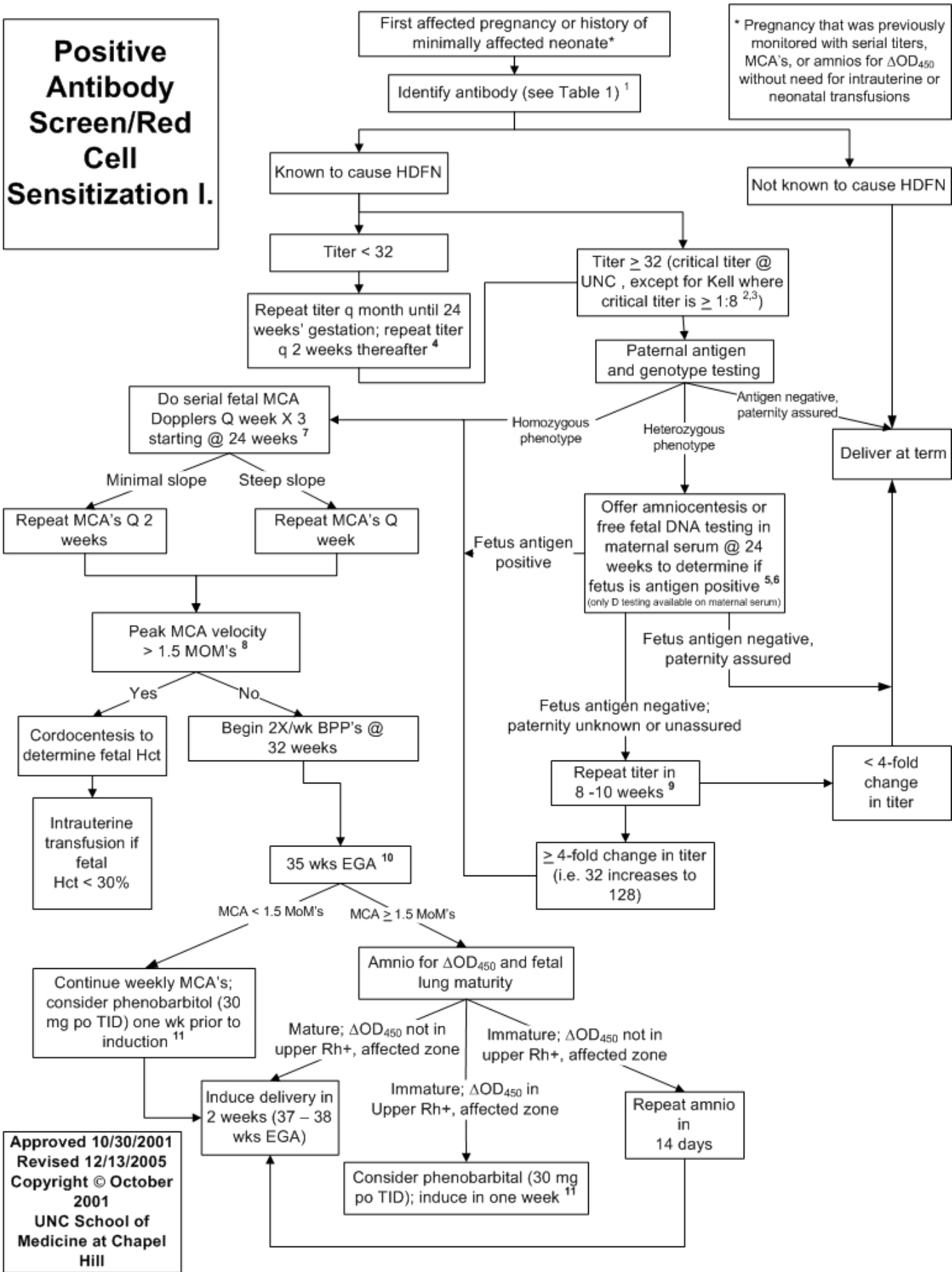


**Positive
Antibody
Screen/Red
Cell
Sensitization I.**



* Pregnancy that was previously monitored with serial titers, MCA's, or amnios for ΔOD_{450} without need for intrauterine or neonatal transfusions

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Positive Antibody Screen/Red Cell Sensitization

1 References

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1) ACOG Educational Bulletin #227, August 1996. Management of Isoimmunization in Pregnancy

Additional anti-red cell antibodies known to cause hemolytic disease include:

TABLE 1. ISOIMMUNIZATION RESULTING FROM IRREGULAR ANTIBODIES*

Blood Group System	Antigen
Rh	C, c, e, E
Kell	K, k, Ko, Kp ^a , Kp ^b , Js ^a , Js ^b
Duffy	Fy ^a , Fy ^b , Fy ³
Kidd	Jk ^a , Jk ^b , Jk ³
MNSs	M, N, S, s, U, Mi ^a , Mt ^a , Vw, Mur, Hil, Hut
Lutheran	Lu ^a , Lu ^b
Diego	Di ^a , Di ^b
Xg	Xg ^a
P	PP, p ^k (Tj ^a)
Public antigens	Yt ^a , Yt ^b , Lan, En ^a , Ge, Jr ^a , Co ^a , Co ^{a-b}
Private antigens	Batty, Becker, Berrens, Biles, Evans, Gonzales, Good, Heibel, Hunt, Jobbins, Radin, Rm, Ven, Wright ^a , Wright ^b , Zd

* Lewis (Le^a, Le^b) and I antigens are not causes of hemolytic disease of the newborn.

Modified from Socol ML. Management of blood group isoimmunization. In: Gleicher N. Principles and practice of medical therapy in pregnancy. 2nd ed. Norwalk, Connecticut: Appleton and Lange, 1992:1051

2) ACOG Educational Bulletin #227, August 1996. Management of Isoimmunization in Pregnancy.

When the titer is 1:32 by indirect antiglobulin (indirect Coombs test), amniocentesis or percutaneous umbilical cord blood sampling (cordocentesis) should be considered.

3) Bowman JM, Pollock JM, Manning FA, Harman CR, Menticoglou S. Maternal Kell blood group alloimmunization. *Obstet Gynecol* 1992; 79: 239-44.

When there is a history of hydrops or the father is Kell-positive and the maternal anti-Kell indirect antiglobulin titer is 8 or greater, amniocentesis should be performed at 16-20 weeks' gestation.

4) ACOG Educational Bulletin #227, August 1996. Management of Isoimmunization in Pregnancy.

Antibody titers should be determined at the first prenatal visit and approximately every 4 weeks thereafter.

5) Bennet PR, LeVan Kim C, Colin Y, et al. Prenatal determination of fetal RhD type by DNA amplification. *N Eng J Med* 1993; 329:607-10.

Determining the fetal RhD type in amniotic cells without invading the fetomaternal circulation is a reliable method that will be valuable in the management of Rh alloimmunization.

Amniotic fluid DNA fetal genotype testing:

The Blood Center
638 N. 18th St.
Milwaukee, WI 53233-2121 Ph: 1 800 245-3117

6) Finning KM, Martin PG, Soothill PW, Avent ND. Prediction of fetal D status from maternal plasma: introduction of a new noninvasive fetal RhD genotyping service. *Transfusion* 2002;42:1079-85. *Fetal D status was predicted with a 100-percent accuracy from maternal plasma.*

Fetal free DNA in maternal serum

Contact the care coordinators of the CM&I Center
International Blood Group Reference Lab
Request form on (www.bloodnet.nbs.nhs.uk/ibgrl/)

7) Detti L, Mari G, Akiyama M, et al. Longitudinal assessment of the middle cerebral artery peak velocity in healthy fetuses and fetuses at risk for anemia. *Am J Obstet Gynecol* 2002;18:937-9. *...we assess the MCA-PSV at weekly intervals, when possible for three weeks. If the MCA-PSV remains below 1.50 MoMs and the slope of the curve given by these three measurements is below 1.99, we repeat the study in 10 – 14 days. If the slope of the line is above 1.99, we repeat the study weekly.*

8) Mari G, Deter RL, Carpenter RL, Rahman F, et al. Noninvasive diagnosis by Doppler ultrasonography of fetal anemia due to maternal red-cell alloimmunization. *N Eng J Med* 2000; 342: 9-14.

The risk of anemia was high in fetuses with a peak systolic velocity of 1.50 times the median or higher. Fetuses with values below 1.50 either did not have anemia or only mild anemia.

9) Hopkins DF. Maternal anti-RhD and the D-negative fetus. *Am J Obstet Gynecol* 1970; 108: 268-71.

In a series of 239 pregnancies in which the fetus was D negative and the mother had previously been immunized to the RhD antigen, the maternal titer of anti-D was found to vary considerably. Thus an apparent rise or fall of one or two tubes (2-4 fold dilution) need have no clinical significance.

10) Detti L, Mari G, Akiyama M, et al. Longitudinal assessment of the middle cerebral artery peak velocity in healthy fetuses and fetuses at risk for anemia. *Am J Obstet Gynecol* 2002;18:937-9. *Currently we are not using the MCA-PSV for clinical decisions after 35 weeks' gestation because of the night number of false-positive results after this gestational age.*

11) Trevett TN, Dorman K, Lamvu G, Moise KJ. Antenatal maternal administration of phenobarbital for the prevention of exchange transfusion in neonates with hemolytic disease of the fetus and newborn. *Am J Obstet Gynecol* 2005;192:478-82. *The use of antenatal phenobarbital was associated with a decreased incidence of exchange transfusion, 9% vs. 52 % (p < 0.01). After controlling for confounding variables, the relative risk for exchange after antenatal phenobarbital was 0.23 (95% CI: 0.06 – 0.76).*

NOTIFICATION TO USERS

These algorithms are designed to assist the primary care provider in the clinical management of a variety of problems that occur in pregnancy. They should not be interpreted as **standard of care** but instead represent **guidelines** for the management of these patients. Variation in practice should be taken into account such factors as characteristics of the individual patient, health resources, and regional experience with diagnostic and therapeutic modalities. The algorithms remain the intellectual property of the University of North Carolina School of Medicine at Chapel Hill. They cannot be reproduced in whole or part without the **expressed** permission of the school.