

**SEVERE NEONATAL HYPERBILIRUBINAEMIA  $\geq 450$  micromol/L**  
**New Zealand Paediatric Surveillance Unit**

If you have any questions about this questionnaire please contact Professor Brian Darlow [brian.darlow@otago.ac.nz](mailto:brian.darlow@otago.ac.nz)  
or Dr Roland Broadbent [roland.broadbent@otago.ac.nz](mailto:roland.broadbent@otago.ac.nz) if you wish to discuss this

**REPORTING CLINICIAN:** 1. \_\_\_\_\_

2. Month/Year of Report: \_\_\_\_/\_\_\_\_/\_\_\_\_ 3. Date questionnaire completed: \_\_\_\_/\_\_\_\_/\_\_\_\_

**PATIENT DETAILS:**

4. First 2 letters of first name: \_\_\_\_ 5. First 2 letters of surname: \_\_\_\_

6. Date of Birth: \_\_\_\_/\_\_\_\_/\_\_\_\_ Time of Birth: \_\_\_\_ (24hr clock)

7. Sex: ☐ M ☐ F 8. Post code of family: ☐☐☐☐☐

9. Child's Ethnicity: ☐ NZ European ☐ Maori ☐ Iwi ☐ Samoan ☐ Tongan  
(allow more than 1) ☐ Cook Island Maori ☐ Niuean ☐ Chinese ☐ Indian ☐ Other \_\_\_\_\_

10. Child's skin colour: ☐ Fair ☐ Dark ☐ Oriental

11. Parents' country of birth: Mother \_\_\_\_\_ Father \_\_\_\_\_

*If this patient is primarily cared for by another physician who you believe will report the case, please complete the questionnaire details above this line and return to NPSU. Please keep the patient's name and other details in your records. If no other report is received for this child we will contact you for information requested in the remainder of the questionnaire.*

**The primary clinician caring for this child is:** Name: \_\_\_\_\_ Hospital: \_\_\_\_\_

*Instructions: Answer each question by ticking the appropriate box or writing your response in the space provided. DK= Don't Know, NA = Not Applicable*

**PERINATAL INFORMATION**

12. Gestation \_\_\_\_\_ weeks ☐ DK 13. Birthweight \_\_\_\_\_ grams ☐ DK

14. Antenatal management of Rhesus disease? ☐ Yes ☐ No ☐ DK

**If yes**, details please: \_\_\_\_\_

15. Mode of delivery: ☐ Vaginal ☐ Vaginal breech ☐ Ventouse ☐ Forceps ☐ Caesarean

16. Where did the birth take place: ☐ Hospital ☐ Home

17. Apgar scores: 1 minute: \_\_\_\_ 5 minutes: \_\_\_\_ 10 minutes: \_\_\_\_

18. Arterial cord gas result **if available**: pH \_\_\_\_\_ Base deficit \_\_\_\_\_

19. Marked bruising eg. large cephalohaematoma: ☐ Yes ☐ No ☐ DK

**If yes**, please give details \_\_\_\_\_

20. Mode of feeding prior to the development of severe hyperbilirubinaemia

☐ Breast only ☐ Formula only ☐ Combination

Describe timings if mode of feeding has changed \_\_\_\_\_

## PRESENTATION and DIAGNOSIS

21. Was this infant re-admitted with jaundice after initially being discharged? ☐ Yes ☐ No ☐ DK

**If NO Pls go to Q27** **If yes**, date of initial discharge: \_\_\_\_/\_\_\_\_/\_\_\_\_

If initially discharged from hospital **before** 48 hours old, please give hours of age at discharge: \_\_\_\_\_

22. What kind of post discharge surveillance was there after initial discharge?

☐ None

☐ Hospital Based Midwifery Discharge Support

☐ GP

☐ Community Based Midwifery Support

☐ Paediatrician

☐ Other (Specify): \_\_\_\_\_

23. Time and date of readmission: Date \_\_\_\_/\_\_\_\_/\_\_\_\_ Time: \_\_\_\_\_ (24hr clock)

24. Source of referral for the readmission:

☐ Hospital Based Midwifery Discharge Support

☐ GP

☐ Community Based Midwifery Support

☐ Paediatrician

☐ Self referred

☐ Other (Specify): \_\_\_\_\_

25. Weight on readmission: \_\_\_\_\_ (grams) ☐ Not weighed ☐ DK

26. Dehydrated on re-admission ☐ Yes ☐ No ☐ DK

Plasma sodium \_\_\_\_\_ mmol/L ☐ Not measured ☐ DK

## DIAGNOSIS

27. Date and time of diagnosis of severe hyperbilirubinaemia: \_\_\_\_/\_\_\_\_/\_\_\_\_ Time: \_\_\_\_\_ (24hr clock)

28. Which criteria were used? ☐ Total serum bilirubin  $\geq 450\mu\text{mol/L}$  ☐ Need for exchange transfusion  $\rightarrow$  **Q29**

☐ Retrospective diagnosis on basis of MRI changes? Yes? ☐  $\rightarrow$  **Go to Q44**

☐ Retrospective diagnosis on basis of clinical kernicterus? Yes? ☐  $\rightarrow$  **Go to Q44**

29. Clinical features at time of severe hyperbilirubinaemia:

Lethargy and poor feeding: ☐ Yes ☐ No ☐ DK

Hypotonia: ☐ Yes ☐ No ☐ DK

Opisthotonus: ☐ Yes ☐ No ☐ DK

Convulsions: ☐ Yes ☐ No ☐ DK

Other (Specify) \_\_\_\_\_

30. Highest Bilirubin result recorded for this infant: \_\_\_\_\_  $\mu\text{mol/L}$

31. Total duration of elevated bilirubin  $\geq 450\mu\text{mol/L}$ : \_\_\_\_\_ (hrs and minutes)

32. Serum bilirubin results **PRE TREATMENT**( $\mu\text{mol/L}$ ). Please include **all results** before any treatment was commenced.  
**Please attach de-identified printout of all serum bilirubin results if available.**

DATE	TIME (24 hr clock)	TOTAL BILIRUBIN $\mu\text{mol/L}$	DATE	TIME (24 hr clock)	TOTAL BILIRUBIN $\mu\text{mol/L}$

33. Serum bilirubin results **POST TREATMENT**( $\mu\text{mol/L}$ ). Please include **all results** after treatment commenced.  
**Please attach de-identified printout of all serum bilirubin results if available.**

DATE	TIME (24 hr clock)	TOTAL BILIRUBIN $\mu\text{mol/L}$	DATE	TIME (24 hr clock)	TOTAL BILIRUBIN $\mu\text{mol/L}$

34. Associated dehydration with hyperbilirubinaemia? ☐Yes ☐No ☐DK

Plasma sodium \_\_\_\_\_mmol/L ☐Not measured Date \_\_\_\_/\_\_\_\_/\_\_\_\_ Time: \_\_\_\_\_(24hr clock)

35. Did the infant have associated culture positive systemic infection? ☐Yes ☐No ☐DK

**If Yes**, SITE: \_\_\_\_\_ ORGANISM: \_\_\_\_\_

36. Lowest albumin level \_\_\_\_\_ g/l Date \_\_\_\_/\_\_\_\_/\_\_\_\_ Time: \_\_\_\_\_(24hr clock) ☐Not measured ☐DK

37. Lowest blood pH \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_ Time: \_\_\_\_\_(24hr clock) ☐Not measured ☐DK

38. Did the infant have other serious morbidity? ☐Yes ☐No ☐DK

**If Yes**, Please specify (eg hypoxic-ischaemic encephalopathy, hypoglycaemia, liver disease) \_\_\_\_\_

39. Cause of hyperbilirubinaemia:

☐Physiological

☐ABO incompatibility: ☐Probable (Coombs positive) ☐Possible (Coombs negative)

☐Rhesus isoimmunisation

☐Glucose-6-phosphate dehydrogenase deficiency

☐Mother's Blood Group

☐Baby's Blood Group

☐Maternal antibody/titre \_\_\_\_\_

☐Other \_\_\_\_\_

## MANAGEMENT

40. Phototherapy used? ☐Yes ☐No ☐DK

**If Yes**, please record times and dates:

DATE	Start (24 hr clock)	End (24 hr clock)	DATE	Start (24 hr clock)	End (24 hr clock)

41. Albumin infusion? ☐Yes ☐No ☐DK *If yes*, time and date commenced \_\_\_\_\_

42. Immunoglobulin infusion ☐Yes ☐No ☐DK *If yes*, number of doses \_\_\_\_\_

43. Exchange transfusion ☐Yes ☐No ☐DK *If yes*, how many \_\_\_\_\_

Time and dates \_\_\_\_\_

44. Was magnetic resonance imaging brain scan done? ☐Yes ☐No ☐DK

*If Yes*, Date \_\_\_\_/\_\_\_\_/\_\_\_\_ and Result:

☐Normal

☐Increased signal on T2-weighted images in globus pallidus

☐Abnormal but not consistent with bilirubin toxicity, (specify): \_\_\_\_\_

☐Other: (specify): \_\_\_\_\_

## OUTCOME

45. Did the baby survive ☐Yes ☐No ☐DK *If Yes*, date of discharge \_\_\_\_/\_\_\_\_/\_\_\_\_

Serum bilirubin closest to discharge: \_\_\_\_  $\mu\text{mol/L}$  Neurological status normal at discharge? ☐Yes ☐No ☐DK

Hearing screen done? ☐Yes ☐No ☐DK

*If Yes*, Result: \_\_\_\_\_

*If baby died*, date of death: \_\_\_\_/\_\_\_\_/\_\_\_\_ Was a post-mortem conducted ☐Yes ☐No ☐DK

*If Yes*, did the post-mortem show kernicterus ☐Yes ☐No ☐DK Or other associated pathology ☐Yes ☐No ☐DK

*If Yes*, (specify): \_\_\_\_\_

46. Which of the following factors may have been present in this case?

☐ Technical errors (eg equipment failure).

Please detail: \_\_\_\_\_

☐ Organisational factor (eg policy, protocols, training).

Please detail: \_\_\_\_\_

☐ Human Behaviour (eg inadequate knowledge, training, coordination, assessment, intervention or monitoring).

Please detail \_\_\_\_\_

☐ Patient related factors (eg religious convictions).

Please detail: \_\_\_\_\_

## FOLLOW UP TRACKING INFORMATION

Please provide details of the physician from whom follow-up information can be obtained:

Please print Name: \_\_\_\_\_ Phone No: \_\_\_\_\_ E-mail: \_\_\_\_\_

Do you have any other comments about this infant?

\_\_\_\_\_

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THANK YOU FOR COMPLETING THIS QUESTIONNAIRE Please return this questionnaire in the addressed reply-paid envelope to:  
Dr Roland Broadbent, Department of Women's and Children's Health, Dunedin School of Medicine, PO Box 913, Dunedin 9054.