<table>
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<tr>
<th>Hierarchical number</th>
<th>Plan title</th>
<th>Pag</th>
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<tr>
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<td>Hyperbilirubinemia</td>
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<td>Exchange-transfusion</td>
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<td>Follow-up</td>
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<td><strong>USER-PERFORMED PLANS</strong></td>
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<td>Blanching-skin-with-digital-pressure-test</td>
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<td>Icterometer-test</td>
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<td>Transcutaneous-jaundice-meter-test</td>
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<td></td>
<td>Determine-extent-cephalocaudal-progression</td>
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<td>Breastfeeding</td>
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<td>Breastfeeding-with-formula</td>
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<tr>
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<tr>
<td></td>
<td>Prescribe-intensive-phototherapy</td>
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</tr>
<tr>
<td></td>
<td>Prescribe-normal-phototherapy</td>
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</tr>
<tr>
<td></td>
<td>Prescribe-observation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prescribe-exchange-tranfusion</td>
<td></td>
</tr>
</tbody>
</table>
General comments:

1. We have decided to incorporate the checks after 2 weeks and after 3 weeks in parallel within the Hyperbilirubinemia plan. The same for the check for rapid TSB increase.

2. The new plan Follow-up deserves a comment. The follow up when the child has been discharged from the hospital doesn’t fit very well within the Hyperbilirubinemia plan, so we have modeled as an independent plan (after many interesting discussions).

3. Notice that we have changed the name of the bilirubin-raw parameter into TSB-value, as well as the categories for the abstraction of this parameter. These are now related to their corresponding treatment: observation (for values lower than the leftmost column in table 1), phototherapy-recommended, phototherapy-normal, phototherapy-intensive and transfusion. There’s another category (toxic) that we assume to be abstracted from TSB-value (we have to inquire about this, maybe values greater than the rightmost column in table 1?).

4. Regarding the TSB-decrease and TSB-change we want also to model it as an abstraction of TSB-value into qualitative and numerical values, respectively, because we use it in expressions such as TSB-change > 0.5 mg/dl/h. We were wondering how to do it because of the many calculations, maybe using the spread definitions?

5. Despite the fact that most user inputs are parameters, we would like to state explicitly the points where some value is required. For the moment we have tried to use explicit asks in the plans where the parameters are needed.

6. We have a fundamental question about the completion or the abort of elementary plans (those corresponding to the prescribed actions, such as Prescribe-phototherapy-intensive or Breastfeeding, which we assume to be user-performed). The question is: in which circumstances do they complete? We think that it is very hard to state complete conditions for these plans (for instance, in the Observation plan, the only useful thing we arrived to was stating “the plan has been active for a while”). For the moment we have assumed that the complete and abort conditions of these plans are manual.

7. Another important question is about the structure of the Regular-treatments plan (modified version of the previous Phototherapy-in-general). We were wondering if it’s possible that this plan switches several times between the different treatments, e.g. the sequence of activations: Phototherapy-normal-preservation, then Phototherapy-intensive, then Phototherapy-normal-preservation again,… Is this what the retry-aborted-children option does?

8. An interesting question arose when we were introducing new intentions. In some plans the intentions we had in mind referred to already existing parameters, so we directly used them in the expressions. However, in most of cases the intentions referred to concepts that had not been modeled yet. In the latter cases we have used other parameters that are set within the plan and then are used in the intentions, like e.g. pathologic-reason (again!). We think it is a nice idea since for us intentions describe other type of knowledge about plans, but we would like to get some feedback for this.

9. Related to the previous, intentions are e.g. of the form Known(pathologic-reason). The first thing that we do with such parameter is setting it to no. This might seem strange, but it is merely a shortcut: we want to avoid the need of an “else” statement.

10. We think we start to understand the continuation specifications (thanks to your new and improved documentation! ;) but we still have a problem to distinguish them from what goes in the complete conditions. Sometimes we have used in complete conditions things like Completed(Plan x), like in Plan 1, but this is redundant with the continuation specification. Could you help us to solve this problem?

11. …and we are still confused with the use of variables and parameters.
<table>
<thead>
<tr>
<th>PLAN 1</th>
<th>Hyperbilirubinemia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LOCAL VARIABLES</strong></td>
<td>Term-Child: Yes/No (One of the very few variables: This value is only entered once and never changes.)</td>
</tr>
<tr>
<td><strong>PREFERENCES</strong></td>
<td></td>
</tr>
<tr>
<td><strong>INTENTIONS</strong></td>
<td>AVOID INTERMEDIATE STATE: bilirubin = toxic</td>
</tr>
<tr>
<td><strong>CONDITIONS</strong></td>
<td>Complete: (Jaundice-clinically-significant = no) Explanation slot: Display “Follow this infant in routine clinical supervision” OR Completed(Treatment-hyperbilirubinemia)</td>
</tr>
<tr>
<td></td>
<td>Abort: (Term-Child = No) Explanation slot: Display “Exiting the protocol to individualized clinical evaluation, including assessment of jaundice in light of prematurity” OR (age = day1) Explanation slot: Display “Exiting the protocol to individualized clinical evaluation, including assessment of jaundice and non-isoimmune hemolytic disease”</td>
</tr>
<tr>
<td><strong>EFFECTS</strong></td>
<td></td>
</tr>
<tr>
<td><strong>PLAN-BODY</strong></td>
<td>DO-SOME-TOGETHER</td>
</tr>
<tr>
<td>Continuation specification: (Check-for-rapid-TSB-increase AND Diagnostics&amp;Treatment)</td>
<td></td>
</tr>
<tr>
<td>Check-for-rapid-TSB-increase</td>
<td></td>
</tr>
<tr>
<td>Check-for-jaundice&gt;2-weeks</td>
<td></td>
</tr>
<tr>
<td>Check-for-jaundice&gt;3-weeks</td>
<td></td>
</tr>
<tr>
<td>Diagnostics&amp;Treatment: DO-SOME-SEQUENTIALLY</td>
<td></td>
</tr>
<tr>
<td>Continuation specification: (Diagnostics-hyperbilirubinemia OR (Diagnostics-hyperbilirubinemia AND Treatment-hyperbilirubinemia))</td>
<td></td>
</tr>
<tr>
<td>Ask Term-Child</td>
<td></td>
</tr>
<tr>
<td>Ask Age-Child</td>
<td></td>
</tr>
<tr>
<td>Diagnostics-hyperbilirubinemia</td>
<td></td>
</tr>
<tr>
<td>Treatment-hyperbilirubinemia</td>
<td></td>
</tr>
<tr>
<td><strong>COMMENTS / QUESTIONS</strong></td>
<td>Why is Term-Child a variable and not a parameter, since it is for user input?</td>
</tr>
<tr>
<td></td>
<td>We want this plan to complete in case of completion of Treatment-hyperbilirubinemia plan; is it possible to do this without a time annotation? If not, how can we do it?</td>
</tr>
<tr>
<td></td>
<td>We want plan 1 to abort when Check-for-rapid-TSB-increase aborts, is this the case? We think so because it is in the continuation specification</td>
</tr>
<tr>
<td></td>
<td>Also, we want the plan Check-for-rapid-TSB-increase to be executed regularly, namely every time a new TSB measurement is entered. We don’t know how to do this, e.g. should it be cyclical?</td>
</tr>
<tr>
<td>PLAN 1.1</td>
<td>Check-for-rapid-TSB-increase</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------</td>
</tr>
</tbody>
</table>

**LOCAL VARIABLES**

**INTENTIONS**

ACHIEVE OVERALL STATE:
known(Possibility-of-G6PD) AND
known(Possibility-of-hemolytic-disease)

**CONDITIONS**

Abort: (TSB-decrease = no
AND TSB-change > 0,5 mg/dl/h)
Explanation slot:
If age = day2
Then
  Display “Exit this protocol. Perform appropriate laboratory assessment
  (possibility of hemolytic disease, probably caused by G6PD)”
If age <> day2
Then
  Display “Exit this protocol. Perform appropriate laboratory assessment
  (possibility of hemolytic disease)”

**EFFECTS**

PLAN-BODY
Possibility-of-G6PD = no
Possibility-of-hemolytic-disease = no
If TSB-increase-rate > 0,5 AND age = day2
Then
  Possibility-of-G6PD = yes
If TSB-increase-rate > 0,5 AND age <> day2
Then
  Possibility-of-hemolytic-disease = yes

**COMMENTS**

- If it is not possible having such a explanation slot, maybe the solution would be adding a plan Display-rapid-TSB-increase to contain the if statements (which would imply adding an ON ABORT Display-rapid-TSB-increase statement to plan 1)

---

<table>
<thead>
<tr>
<th>PLAN 1.2</th>
<th>Check-for-jaundice&gt;2-weeks</th>
</tr>
</thead>
</table>

**LOCAL VARIABLES**

Possibility-of-cholestatic-disease

**INTENTIONS**

ACHIEVE OVERALL STATE:
known(Possibility-of-cholestatic-disease)

**CONDITIONS**

Filter: (jaundice-clinically-significant yes AND 2 weeks, |_,_,| Birth-Date)

**PLAN-BODY**

Cholestatic-disease-investigation
<table>
<thead>
<tr>
<th>PLAN</th>
<th>Cholestatic-disease-investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.1</td>
<td></td>
</tr>
</tbody>
</table>

**LOCAL VARIABLES**

**INTENTIONS**

ACHIEVE OVERALL STATE: known(Possibility-of-cholestatic-disease)

**CONDITIONS**

**EFFECTS**

**PLAN-BODY**

DO-ALL-SEQUENTIALLY

DO-ALL-A NYORDER

Ask physical-exam-OK
Ask colour-stools
Ask colour-urine

Possibility-of-cholestatic-disease = no

If physical-exam-OK = no OR colour-stools = light OR
colour-urine = dark

Then

Ask direct-serum-bilirubin
Possibility-of-cholestatic-disease = yes

Display “Perform appropriate laboratory
assessment, including possibility of cholestatic jaundice”

Else

Display “Provide routine care, recommend
routine feeding and follow-up”

**RETURNS**

---

<table>
<thead>
<tr>
<th>PLAN</th>
<th>Check-for-jaundice&gt;3-weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3</td>
<td></td>
</tr>
</tbody>
</table>

**LOCAL VARIABLES**

**INTENTIONS**

ACHIEVE OVERALL STATE: known(Possibility-of-cholestatic-disease)

**CONDITIONS**

Filter: (jaundice-clinically-significant yes * [_,_]3 weeks, [_,] Birth-Date)

**PLAN-BODY**

DO-ALL-SEQUENTIALLY

DO-ALL-A NYORDER

Ask TSB-value
Ask direct-serum-bilirubin
Ask total-urine-bilirubin

Possibility-of-cholestatic-disease = yes

Display “Perform appropriate laboratory assessment, including possibility of cholestatic jaundice”
<table>
<thead>
<tr>
<th>PLAN</th>
<th>Diagnostics-hyperbilirubinemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL VARIABLES</td>
<td></td>
</tr>
<tr>
<td>INTENTIONS</td>
<td>ACHIEVE: OVERALL STATE: known(jaundice-clinically-significant) AND known(Pathologic-reason)</td>
</tr>
<tr>
<td>CONDITIONS</td>
<td>Complete:</td>
</tr>
<tr>
<td>EFFECTS</td>
<td></td>
</tr>
<tr>
<td>PLAN-BODY</td>
<td>DO-ALL-SEQUENTIALLY</td>
</tr>
<tr>
<td></td>
<td>;; This is just a programming shortcut!</td>
</tr>
<tr>
<td></td>
<td>Pathologic-reason = no</td>
</tr>
<tr>
<td></td>
<td>Anamnesis-abnormal-signs</td>
</tr>
<tr>
<td></td>
<td>Blood-tests</td>
</tr>
<tr>
<td></td>
<td>Anamnesis-hemolytic-disease</td>
</tr>
<tr>
<td></td>
<td>Jaundice-determination</td>
</tr>
<tr>
<td>RETURNS</td>
<td></td>
</tr>
</tbody>
</table>
### PLAN 1.4.1 Anamnesis-abnormal-signs

#### LOCAL VARIABLES

#### PREFERENCES

#### INTENTIONS

ACHIEVE: OVERALL STATE:

known(Possibility-of-other-diseases)

#### CONDITIONS

Abort: (Possibility-of-other-diseases = true)

Explanation:

**Display** “Exiting the protocol to individualized clinical evaluation, including assessment of jaundice and underlying disease”

#### EFFECTS

#### PLAN-BODY

DO-ALL-SEQUENTIAL

DO-ALL-A NyORDER

ask vomiting

ask lethargy

ask feeding-difficulty

ask hepatosplenomegaly

ask excessive-weight-loss

ask apnea

ask instable-temperature

ask tachypnea

ask behavior-changes

Possibility-of-other-diseases = no

If Vomitting= yes OR lethargy= yes

OR feeding-difficulty= yes

OR hepatosplenomegaly= yes

OR excessive-weight-loss= yes

OR apnea= yes OR instable-temperature= yes

OR tachypnea= yes OR behavior-changes= yes

Then

Possibility-of-other-diseases = yes

;; It’s useless because the plan will abort!!!

If Possibility-of-other-diseases = yes

Then

Pathologic-reason = yes

---

### PLAN 1.4.2 Blood-tests

#### LOCAL VARIABLES

#### PREFERENCES

#### INTENTIONS

ACHIEVE OVERALL STATE:

#### CONDITIONS

#### EFFECTS

#### PLAN-BODY

DO-SOME-SEQUENTIALLY

Continuation specification: 0

Blood-test-mother

Blood-test-child

#### COMMENTS / QUESTIONS
<table>
<thead>
<tr>
<th>PLAN 1.4.2.1</th>
<th>Blood-test-mother</th>
</tr>
</thead>
</table>

**LOCAL VARIABLES**

**PREFERENCES**

**INTENTIONS**

ACHIEVE OVERALL STATE:
Known(Consider-holding-cord-blood)

**CONDITIONS**

Filter:
The mother’s ABO and rhesus are known

| Known(Bloodtype-mother) AND Known(Rhesustype-mother) AND Known(Serum-screen-isoimmune-antibodies-present) |

**EFFECTS**

**PLAN-BODY**

DO-ALL-SEQUENTIALLY

Consider-holding-cord-blood = no

If (Rhesustype-mother = pos AND serum-screen-isoimmune-antibodies-present = neg) OR Bloodtype-mother = O

Then

Consider-holding-cord-blood = yes

Display “Consider holding the infants cord blood in a blood bank in case future testing is necessary”

**RETURNS**
<table>
<thead>
<tr>
<th>PLAN 1.4.2.2</th>
<th>Blood-test-child</th>
</tr>
</thead>
</table>

**LOCAL VARIABLES**

**PREFERENCES**

**INTENTIONS**

ACHIEVE OVERALL STATE:
- Known(Bloodtype-child) AND
- Known(Rhesustype-child) AND
- Known(Possibility-of-isoimmune-hemolytic-disease)

**CONDITIONS**

Filter:
The mother’s ABO and rhesus are unknown, OR they are but the infant’s cord blood was not held

NOT
- (Known(Bloodtype-mother) AND Known(Rhesustype-mother) AND Known(Serum-screen-isoimmune-antibodies-present))
- OR (Rhesustype-mother = neg OR serum-screen-isoimmune-antibodies-present = pos)

Abort: (direct-coombs-test = positive)
Explanation:
Display “Exiting the protocol to individualized clinical evaluation, including assessment of jaundice and isoimmune hemolytic disease (positive coombs test)”

**EFFECTS**

**PLAN-BODY**

DO-ALL-SEQUENTIALY
- DO-ALL-ANYORDER
  - Ask Bloodtype-child
  - Ask Rhesustype-child
  - Ask direct-coombs-test
  - Possibility-of-isoimmune-hemolytic-disease = no
  - If direct-coombs-test = positive
    - Possibility-of-isoimmune-hemolytic-disease = yes
      - ;; Sure? In any case it’s useless because the plan will abort!!!
    - Pathologic-reason = yes

**RETURNS**
### PLAN 1.4.3 Anamnesis-hemolytic-disease

#### LOCAL VARIABLES

#### PREFERENCES

#### INTENTIONS

ACHIEVE OVERALL STATE:
- Known(Possibility-of-hemolytic-disease) AND Known(Possibility-of-inherited-disease)

#### CONDITIONS

#### EFFECTS

#### PLAN-BODY

**DO-SOME-SEQUENTIALLY**

*Continuation specification: (Evaluation-risk-factors-hemolytic-disease)*

**DO-ALL-ANYORDER**

- **Ask** family-history
- **Ask** ethnical-origin
- **Ask** geographic-origin
- **Ask** timing-of-appearance-jaundice
- **Ask** pallor
- **Ask** hepatosplenomegaly

Possibility-of-hemolytic-disease = no
Possibility-of-inherited-disease = no

**Evaluation-risk-factors-hemolytic-disease**

**If** ethnical-origin = yes

**Then**

Possibility-of-inherited-disease = yes
Pathologic-reason = yes

#### RETURNS

### PLAN 1.4.3.1 Evaluation-risk-factors-hemolytic-disease

#### LOCAL VARIABLES

#### PREFERENCES

#### INTENTIONS

ACHIEVE OVERALL STATE:
- Known(Possibility-of-hemolytic-disease)

**Filter:** (family-history = yes OR ethnical-origin = yes OR etc)

**Abort:** (Possibility-of-hemolytic-disease = yes)

Explanation slot:

**Display** “Exiting the protocol to individualized clinical evaluation, including assessment of jaundice and non-isoimmune hemolytic disease”

#### EFFECTS

#### PLAN-BODY

**DO-ALL-SEQUENTIALLY**

- **Display** "Perform appropriate laboratory assessment of infant including (but not limited to): (1) complete blood count, differential smear, reticulocyte count; (2) G6PD screen; (3) hemoglobin electrophoresis”
- **Ask** Possibility-of-hemolytic-disease

**If** Possibility-of-hemolytic-disease = yes

**Then**

Pathologic-reason = yes

#### RETURNS
### PLAN 1.4.4 Jaundice-determination

#### LOCAL VARIABLES

#### INTENTIONS

ACHIEVE OVERALL STATE: Known(jaundice-clinically-significant)

#### CONDITIONS

#### EFFECTS

#### PLAN-BODY

DO-ALL-SEQUENTIAL

- Blanching-skin-with-digital-pressure-test
- Ictometer-test
- Transcutaneous-jaundice-meter-test
- Determine-extent-cephalocaudad-progression
- Ask Jaundice-clinically-significant

#### RETURNS

### PLAN 1.5 Treatment-hyperbilirubinemia

#### LOCAL VARIABLES

#### PREFERENCES

#### INTENTIONS

AVOID INTERMEDIATE STATE:

- bilirubin = toxic

ACHIEVE OVERALL STATE:

- bilirubin = observation

#### CONDITIONS

Complete: Completed(Exchange-transfusion) OR Completed(Regular-treatments)

#### EFFECTS

#### PLAN-BODY

DO-ALL-TOGETHER

DO-SOME-ANYORDER

- Continuation specification: (Regular-treatments OR Exchange-transfusion)
  - Regular-treatments
    - ON-ABORT Exchange-transfusion
  - Exchange-transfusion
    - CYCLICAL
      - every 12-24h Ask age, TSB-value

#### COMMENTS / QUESTIONS

- We have renamed the plan Continued-observation into Feeding-alternatives and moved it into Regular-treatments plan.
- Now the plan Exchange-transfusion can be activated immediately (without any PT having failed first) and also after the abort of Regular-treatments plan.
- The cyclical plan should be replaced in the future by the cyclical time annotation linked to abstractions.
<table>
<thead>
<tr>
<th>PLAN 1.5.1</th>
<th>Regular-treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL VARIABLES</td>
<td></td>
</tr>
<tr>
<td>PREFERENCES</td>
<td></td>
</tr>
</tbody>
</table>
| INTENTIONS | AVOID INTERMEDIATE STATE: 
bilirubin = transfusion 
ACHIEVE OVERALL STATE: 
bilirubin = observation |
| CONDITIONS | Filter: 
Bilirubin is not transfusion | (bilirubin not transfusion * [_,_,] [0_,] [_,_] NOW) |
| | Complete: | Completed(Observation) |
| | Abort: | (bilirubin transfusion * [_,_,] [0_,] [_,_] NOW) |
| EFFECTS |
| PLAN-BODY | DO-ALL-TOGETHER 
Feeding-alternatives 
DO-SOME-ANYORDER 
Retry aborted children 
Continuation specification: (Observation) 
Phototherapy-intensive 
Phototherapy-normal-prescription 
Phototherapy-normal-recommended 
Observation |
| COMMENTS / QUESTIONS | • As there is a difference between the feeding plan and the observation itself, we have decided to separate them. We have also put the feeding plan in parallel with all treatments except for the Exchange-transfusion one (see Table 3 in the guideline). 
• With the current control structure, what we want is to complete this plan as soon as the Observation plan completes (which implies that the bilirubin value is observation). Is this design correct? |
<table>
<thead>
<tr>
<th>PLAN 1.5.1.1</th>
<th>Feeding-alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL VARIABLES</td>
<td></td>
</tr>
<tr>
<td>PREFERENCES</td>
<td></td>
</tr>
<tr>
<td>INTENTIONS</td>
<td>???</td>
</tr>
<tr>
<td>CONDITIONS</td>
<td></td>
</tr>
<tr>
<td>EFFECTS</td>
<td></td>
</tr>
<tr>
<td>PLAN-BODY</td>
<td>DO-ALL-SEQUENTIAL</td>
</tr>
<tr>
<td></td>
<td>Ask Breastfed-Child</td>
</tr>
<tr>
<td></td>
<td>If Breastfed-Child = yes</td>
</tr>
<tr>
<td></td>
<td>DO-ONE (manual activation)</td>
</tr>
<tr>
<td></td>
<td>Breastfeeding</td>
</tr>
<tr>
<td></td>
<td>Breastfeeding-with-formula</td>
</tr>
<tr>
<td></td>
<td>Formula-only</td>
</tr>
<tr>
<td>COMMENTS / QUESTIONS</td>
<td>• What happens here if the child is not breastfed? Does the whole plan complete successfully? If not, then what happens to the parent plan? (we hope it always completes!)</td>
</tr>
</tbody>
</table>
**PLAN** 1.5.1.2 Phototherapy-intensive

**LOCAL VARIABLES**

**PREFERENCES**  Strategy: slightly aggressive, overdose is however impossible

**INTENTIONS**  ACHIEVE OVERALL STATE: bilirubin = phototherapy-normal

ACHIEVE OVERALL STATE: (TSB-decrease = yes

AND TSB-change < 1 mg/dl/h)

**CONDITIONS**

**Filter:**

Bilirubin is phototherapy-intensive, OR is phototherapy-normal but there is no decrease

(bilirubin phototherapy-intensive * [_,_,][0,_,][_,_] NOW)

OR

((bilirubin phototherapy-normal * [_,_,][0,_,][_,_] NOW)

AND

(TSB-decrease no * [_,_,][0,_,][_,_] NOW))

**Abort:**

Bilirubin is not phototherapy-intensive, OR is phototherapy-intensive AND: TSB decrease rate is too low within 4-6h OR there is no decrease after 4h

(bilirubin not phototherapy-intensive * [_,_,][0,_,][_,_] NOW)

OR

((bilirubin phototherapy-intensive * [_,_,][0,_,][_,_] NOW)

AND

((TSB-decrease yes * [4 hours,_,] [_,6 hours] [_,_] *self*) AND (TSB-change < 1 [4 hours,_,] [_,6 hours] [_,_] *self*))

OR

(TSB-decrease no * [4 hours,_,] [_,_] [_,_] *self*) )

Explanation slot: Display “Failure of intensive phototherapy. Perform appropriate laboratory assessment (possibility of hemolytic disease)”

**EFFECTS**

TSB-value decreases

Hydration-level might decrease

**PLAN-BODY** Prescribe-intensive-phototherapy

**COMMENTS**

- The second abort condition here is important: if the intensive PT doesn’t achieve a significant reduction of the TSB levels within 4-6h the plan should abort, and exchange transfusion will become active. Is our abort condition correct?

Also, we would like to enforce a TSB reading after 4-6h, how to really enforce it?
### PLAN 1.5.1.3 Phototherapy-normal-prescription

#### LOCAL VARIABLES

#### PREFERENCES
- Strategy: normal
- Select-methods: All filter conditions must be met
- Resources: Phototherapy-unit

#### INTENTIONS
- ACHIEVE OVERALL STATE: bilirubin = observation

#### CONDITIONS
- **Filter:** Bilirubin is phototherapy-normal
  - (bilirubin phototherapy-normal * [_,_],[0,_],[0,_] NOW)

- **Abort:** Bilirubin is not phototherapy-normal, OR is phototherapy-normal but there is no decrease
  - (bilirubin not phototherapy-normal * [_,_],[0,_],[0,_] NOW)
  - OR (bilirubin phototherapy-normal * [_,_],[0,_],[0,_] NOW) AND (TSB-decrease no * [_,_],[0,_],[0,_] NOW))

#### EFFECTS
- TSB-value decreases,
- Hydration-level might decrease.

#### PLAN-BODY
- Prescribe-normal-phototherapy

#### RETURNS

### PLAN 1.5.1.4 Phototherapy-normal-recommendation

#### LOCAL VARIABLES

#### PREFERENCES

#### INTENTIONS
- ???

#### CONDITIONS
- **Filter:** Bilirubin is phototherapy-recommended
  - (bilirubin phototherapy-recommended * [_,_],[0,_],[0,_] NOW)

- **Abort:** Bilirubin is not phototherapy-recommended
  - (bilirubin not phototherapy-recommended * [_,_],[0,_],[0,_] NOW)

#### EFFECTS

#### PLAN-BODY
- DO-ONE (manual activation)
  - Prescribe-observation
  - Prescribe-normal-phototherapy

#### RETURNS
<table>
<thead>
<tr>
<th>PLAN 1.5.1.5</th>
<th>Observation</th>
</tr>
</thead>
</table>

**LOCAL VARIABLES**

**PREFERENCES**

**INTENTIONS**

MAINTAIN INTERMEDIATE STATE:
bilirubin = observation

**CONDITIONS**

<table>
<thead>
<tr>
<th>Filter: Bilirubin is observation</th>
<th>(bilirubin observation * [<em>,</em>],[0,<em>,</em>] NOW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete: After Prescribe-observation manually completes</td>
<td>Completed(Prescribe-observation)</td>
</tr>
<tr>
<td>Abort: Bilirubin is not observation</td>
<td>(bilirubin not observation * [<em>,</em>],[0,<em>,</em>] NOW)</td>
</tr>
</tbody>
</table>

**EFFECTS**

**PLAN-BODY**

Prescribe-observation

**RETURNS**
<table>
<thead>
<tr>
<th>PLAN 1.5.2</th>
<th>Exchange-transfusion</th>
</tr>
</thead>
</table>

**LOCAL VARIABLES**

**PREFERENCES**

**INTENTIONS**

AVOID INTERMEDIATE STATE:
bilirubin = toxic

ACHIEVE OVERALL STATE:
bilirubin <> transfusion

**CONDITIONS**

Filter:
Bilirubin is transfusion, OR bilirubin is intensive AND, there is no TSB decrease OR it is too low

(bilirubin transfusion * [__],[0,]_[_,] NOW) OR
((bilirubin phototherapy-intensive * [_,],[0,],_[_,] NOW) AND
( (TSB-decrease no * [4 hours,] [_,] [_,] Activated(Phototherapy-intensive)) OR
((TSB-decrease yes * [4 hours,] [_,6 hours] [_,] Activated(Phototherapy-intensive)) AND
(TSB-change < 1 [4 hours,] [_,6 hours] [_,] Activated(Phototherapy-intensive)) ) )

Complete:
After Prescribe-intensive-phototherapy and Prescribe-exchange-transfusion manually complete

Completed(Prescribe-intensive-phototherapy) AND
Completed(Prescribe-exchange-transfusion)

**EFFECTS**

PLAN-BODY

DO-ALL-TOGETHER
Prescribe-intensive-phototherapy
Prescribe-exchange-transfusion

**RETURNS**

<table>
<thead>
<tr>
<th>PLAN 2</th>
<th>Follow-up</th>
</tr>
</thead>
</table>

**CONDITIONS**

Filter: ChildDischarged = yes
In context age in\{day1,day2\}

**PLAN-BODY**

Display “Follow up by health care professional in an office, clinic or at home within 2 or 3 days after discharge”