

Transcutaneous Bilirubinometer (TCB) and Home phototherapy

Dr Shirley Mulvaney, PEM consultant Alder Hey Children's NHS Trust

Introduction

1. To describe the evidenced base use of a transcutaneous bilirubinometer (TCB) in the design and implementation of a management pathway for well, jaundiced babies presenting to the emergency department (ED)
2. To describe the setup of a home phototherapy system, avoiding unnecessary hospital admission and delivering a better patient journey

Methods

2017 - Retrospective case note review of all patients coded as "jaundice", and all bilirubin samples sent to the lab from infants between 1 and 14 days from the Emergency Department in 2016.

2018 - Trial of 2 devices, results being paired to laboratory blood bilirubin results.
Set up of guideline for use of the TCB in early jaundice

2019 - Retrospective case note review of use of TCB in the department in 2018.
Set up of a home phototherapy service.

2020 - Retrospective case note review of all the babies coded as jaundice +/- other problem between September 2019 and March 2020.
Review of parent feedback forms sent out with the community nursing team (CCNT team).

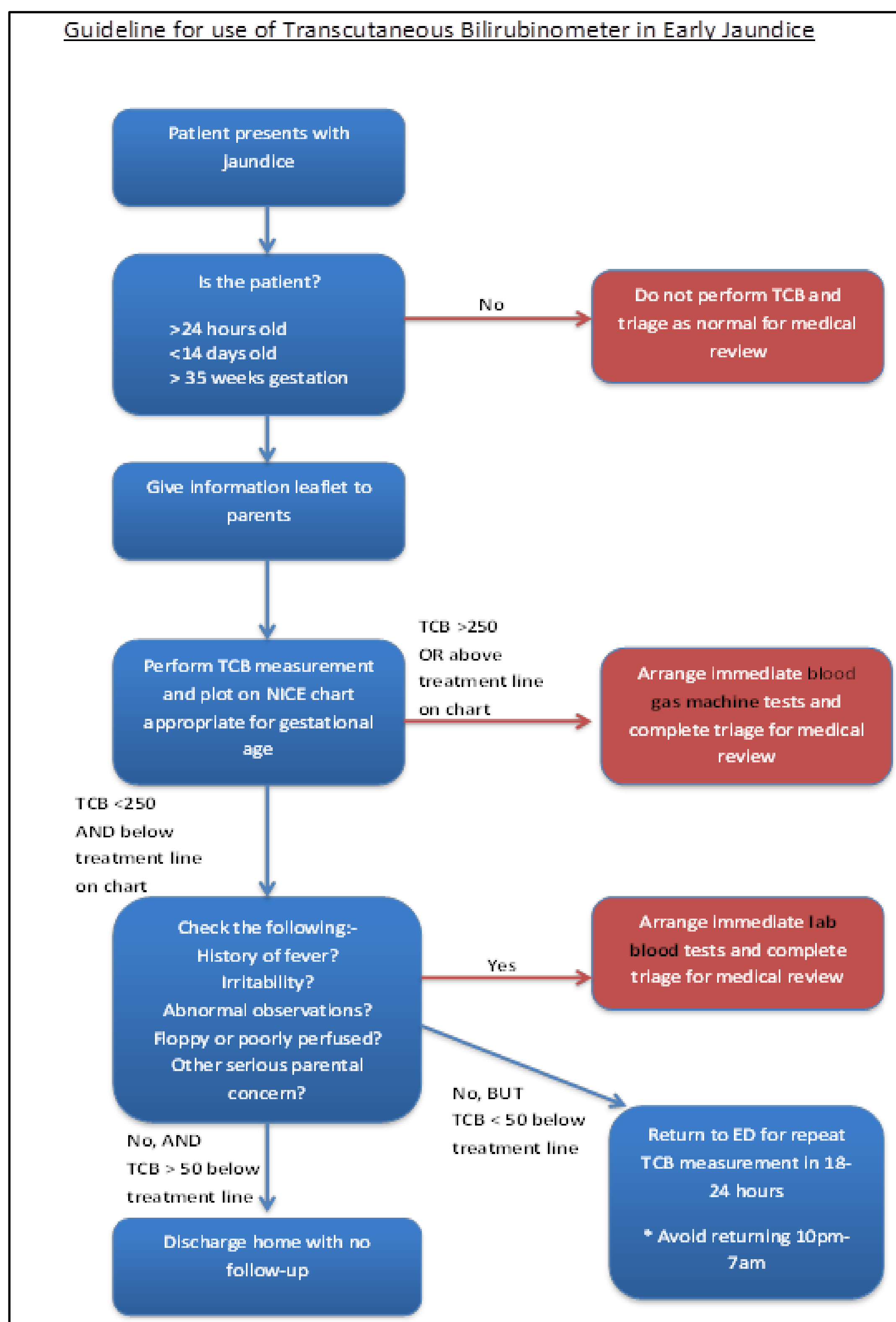


Results

2017

433 patient visits identified, 254/433 (59%) patients had a bilirubin less than, or equal to 250. 11/254 (4%) patients had to have bloods repeated due to failure of initial blood taking. Average waiting time for bloods results was 1 hour and 35 minutes and the average length of stay in the department was 3 hours 17 minutes

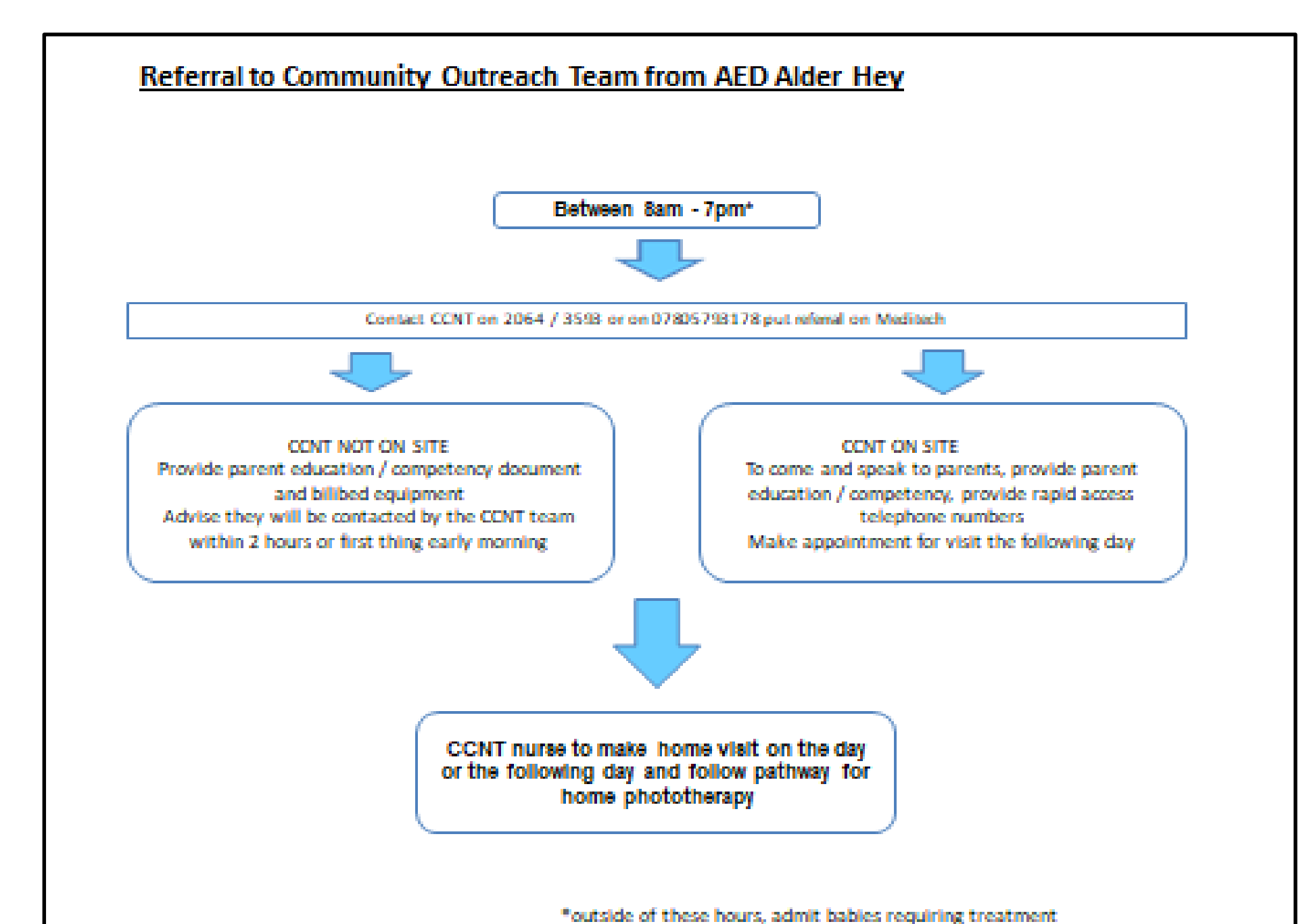
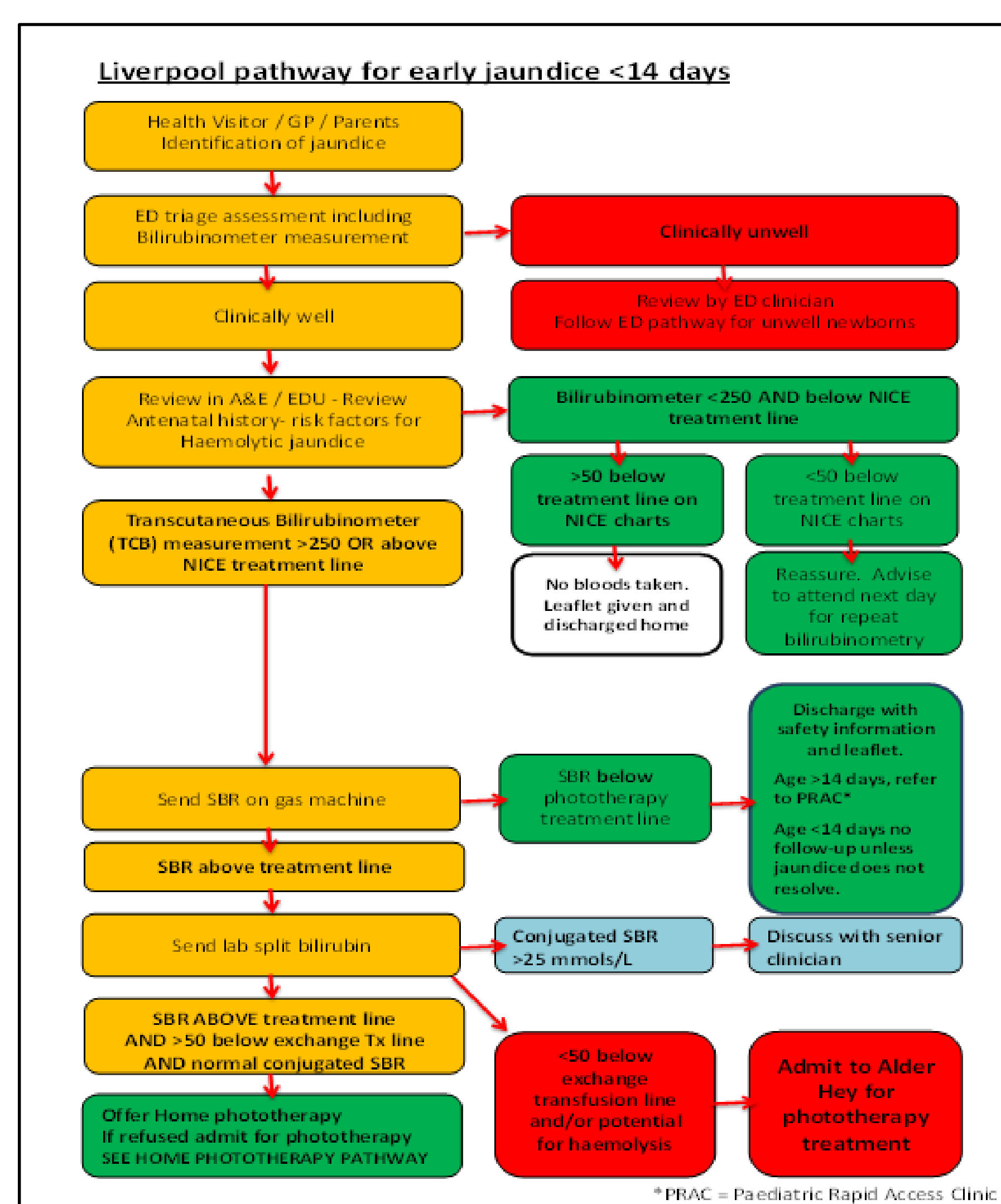
2018



2019

276 babies with a mean gestation of 38 weeks and a mean age of 5 days qualified for the TCB pathway protocol. Average waiting times for these babies was 30 minutes versus 1 hour 57 minutes pre pathway implementation, reducing overall waiting times. 46% of babies did not require a blood test. 93/276 (33.7%) were admitted. Of these, 80 patients were admitted for phototherapy. 183/276 (66.3%) were discharged, requiring no further follow up nor intervention. 21/276 (7.6%) were advised to come back for a repeat bilirubin level and did return.

Home phototherapy



27 babies eligible for the service. Average stay on bilibed was 2 days. No complications were reported. Feedback showed 100% parent satisfaction.

Conclusions

- TCB devices are a reliable, evidence based, safe alternative to blood testing in early neonatal jaundice. The home phototherapy setup allows for better parent bonding, minimising parental anxiety. Unnecessary blood investigations and hospital admission are not only cost saving, but lead to a better patient experience and minimises risk in this vulnerable group of patients.