

EVALUATION OF THE EFFECTIVENESS OF TRANSCUTANEOUS BILIRUBINOMETRY IN REDUCING THE NUMBER OF SERUM BILIRUBIN TESTS IN NEONATAL JAUNDICE

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Background: Bilicheck is a non-invasive device that uses multiwavelength spectral reflectance analysis to measure bilirubin levels transcutaneously. Previous work in our institution predicted that using bilicheck in jaundiced babies born after 34 weeks may reduce the number of serum bilirubin tests (SBR's) needed by up to 55%. On the basis of this work, the use of Bilicheck was introduced into clinical practise in 2003.

Aim: To determine whether clinical use of Bilicheck has resulted in a reduction of SBR's in clinical practice and quantify that reduction.

Methods: A retrospective evaluation of all SBR's taken in 2002 (pre Bilicheck) and 2009 (post Bilicheck) compared the frequency of blood sampling for bilirubin estimation and values obtained.

Results:

	2002 pre-Bilicheck	2009 post-Bilicheck	p value
Total babies (population)	5692	7938	
Total jaundiced babies with SBR equal to or greater than 300	109 (1.9%)	98 (1.2%)	0.0017
Babies who had SBRs	1029 (18.1%)	915 (11.5%)	
Total number of SBRs	3732	2957	0.000
Tests per baby - Median Range	3 (1-33)	2 (1-27)	0.004

Conclusions: Since the introduction of Bilicheck, there has been a significant decrease in the number of SBR tests undertaken as well as the proportion of babies having SBR measurements.

The use of Bilicheck exposes fewer neonates of >34 weeks gestation to painful invasive blood taking procedures. As SBRs measurements are both time and resource consuming, Bilicheck is likely to provide a more cost effective approach to the traditional method of management of jaundice.