The Royal Australian and New Zealand College of Obstetricians and Gynaecologists

Excellence in Women's Health

NUCHAL TRANSLUCENCY

ultrasound, education and monitoring program

Audit Assessment Guide

nuchaltrans.edu.au

Introduction

The Nuchal Translucency Ultrasound Education and Monitoring Program (NTUEMP) perform annual quality assurance checks on practices and operators performing the Nuchal Translucency (NT) scan.

This guide provides information for operators on how audit assessment on NT data is conducted and how performance is measured.

In the past, an audit report has been couched in terms of percentage for NT measurements that lie above the 50th percentile with respect to the Fetal Medicine Foundation (FMF) reference curve. In order to provide more detailed operator feedback, in 2017, NTUEMP changed the audit standards to align with those introduced more recently by FMF UK.

Minimum Number of Nuchal Scans Required for Audit

The distribution of nuchal translucency measurements cannot be meaningfully assessed on fewer than 30 scans.

When operators do not meet the minimum number of nuchal scans in an audit year, scans performed in the previous audit year are combined with the current audit year to reach the minimum 30 required. Scans performed from up to three previous audit years can be combined with the current audit year to reach the minimum. If the number of scans across four consecutive audit years is still fewer than 30, a red flag will be issued.

If operators are unable to obtain a case load of 30 plus scans annually for two consecutive years the license may not be renewed for a third year subject to review.

Audit Assessment Criteria

Audit Standards assess an individual's performance of the NT scan.

An audit report contains assessment of paired NT and CRL measurements performed by each ultrasound operator over the audited time period with an accompanying description and **'flags'** to indicated performance in three key areas:

Bias	The difference between the paired nuchal translucency (NT) and crown rump length (CRL) measurements relative to the FMF reference curve
Spread	The way measurements cluster about the FMF reference curve
Trend	The shape and direction of the curve of paired NT and CRL measurements relative to the FMF reference curve

Bias

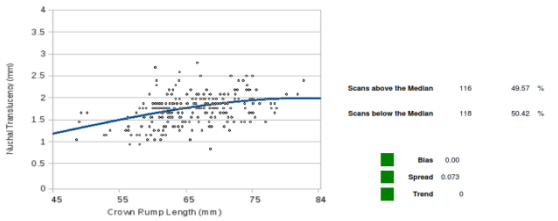
The overall **bias** of paired NT and CRL measurements is estimated relative to the FMF reference curve. This refers to the difference between the observed NT measurements and those expected from the FMF reference curve.

For example, the expected NT for a CRL of 60mm is 1.65mm. Thus, if a patient with a CRL of 60mm has an NT of 2.0mm, the difference is 2.0mm-1.65mm = 0.35mm. If the measured NT is 1.0mm, the difference is 1.0mm-1.65mm = -0.65mm.

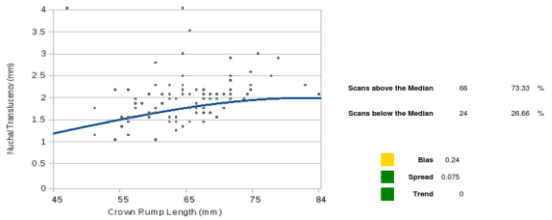
The bias value displayed next to the distribution plot denotes the median distance of all measurements from the curve. This identifies whether the operator generally over-measures or under-measures the NT.

Feedback on the degree of bias observed in each dataset is indicated using a Green (G), Amber (A) or Red (R) flag. Ideally half the nuchal measurements in a dataset should lie above the curve and half below.

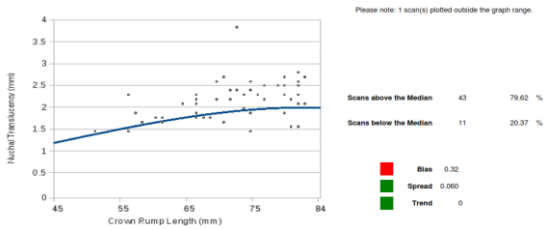
Green Flag Bias relative to the FMF reference curve is less than or equal to 0.10mm



Amber Flag Bias is greater than 0.10mm and less than or equal to 0.25mm



Red Flag Bias is greater or equal to 0.26mm



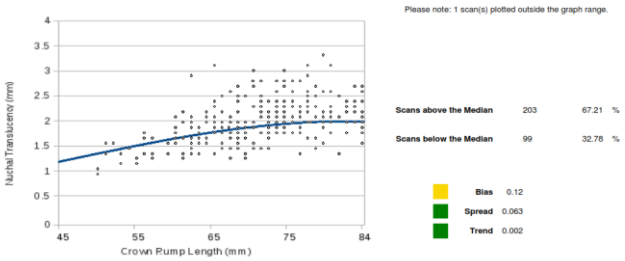
Spread

The **spread**, also known as **standard deviation**, specifies how most measurements cluster along the FMF reference curve

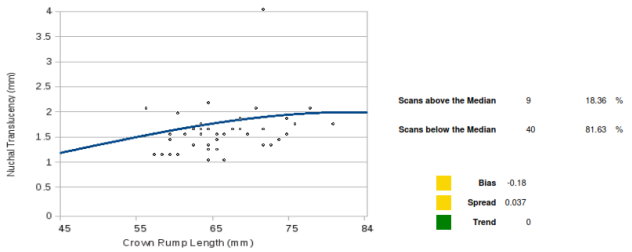
The value displayed is the factor by which the spread is increased where the measurements vary more greatly than would be expected given the CRL or decreased where the measurements cluster very tightly around the curve, without the expected normal variance.

A **flag** for spread is given to indicate whether, after taking account of CRL, the spread of NT measurement is greater or less than expected from the FMF reference curve. Only Green (G) or Amber (A) flags are applicable. The comments will reflect whether the NT measurements are more or less spread from the FMF reference curve than expected.

Green Flag No evidence to substantiate difference from the FMF reference curve



Amber Flag Substantiative difference from the FMF reference curve – more spread or less spread than expected



Trend

Trend takes into account the shape and direction of the curve of paired NT and CRL measurements relative to that of the FMF reference curve. The value displayed shows the degree of discrepancy between NT measurements across different CRL values.

A **flag** for trend is applicable if there is a trend deviation from the FMF reference curve. A trend deviation describes the relationship between NT and CRL measurements in relation to the direction of the FMF reference curve. A comment for trend is given only for an Amber (A) flag and describes the direction of the trend deviation.

Interpreting measures

Deviations in measurements can impact on the final risk for Down syndrome that is provided to each patient through prenatal screening.

The summary below is a simplified interpretation of the effect on patient risks.

		Description	Effect on risk calculation
Bias	Positive	Points tend to lie above the FMF curve.	Estimated risks are increased.
	Negative	Points tend to lie below the FMF curve.	Estimated risks are decreased.
Spread	Increased	Points tend to lie further from the FMF curve.	Estimated risk tends to be increased for NT measurements above the curve and decreased for NT measurements below the curve.
	Decreased	Points tend to lie closer from the FMF curve.	Estimated risk tends to be decreased for NT measurements above the curve and increased for NT measurements below the curve.

Trend	Positive	For lower CRL values, points tend to lie below the curve. For higher CRL values, points tend to lie above the curve.	Estimated risks are decreased for patients with low CRL and increased for patients with high CRL.
	Negative	For lower CRL values, points tend to lie above the curve. For higher CRL values, points tend to lie below the curve.	Estimated risks are increased for patients with low CRL and decreased for patients with high CRL.

Interpreting audit reports

When interpreting audit reports, bias is the primary focus of feedback. Assessors' comments on images supplied are relevant as they further reinforce the quality assurance process.

Bias flag	Description	Action
Green (G)	Satisfactory performance and meeting audit standard.	No action required to continue screening.
Amber (A)	Meeting audit standard for first year. Meeting audit standard for the second year, if first year audit bias is amber	Practitioners are required to discuss the adjustment required to improve practice with the person nominated in the practice to support feedback process or staff from the NTUEMP
Red (R)	Performance unsatisfactory and not meeting audit standard.	Practitioners are required to undertake further training, support, advice and supervision until measurements improve to receive either Amber (A) or Green (G) flag status for bias.

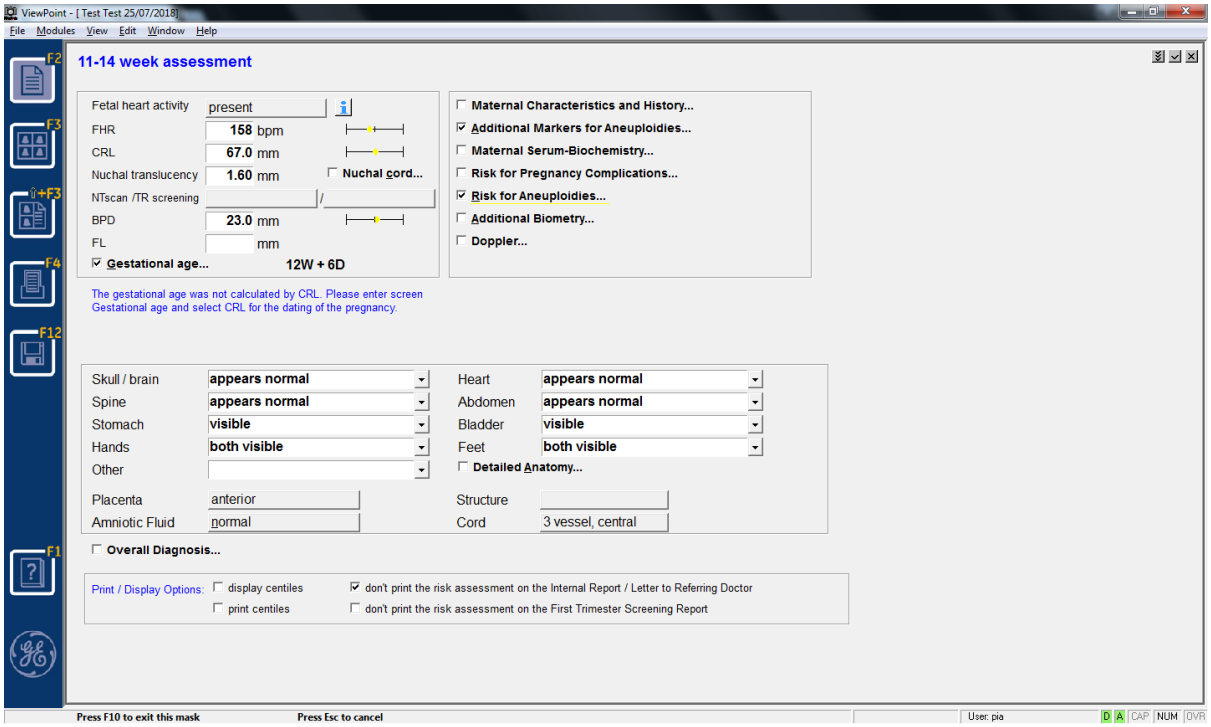
Audit Data

Annual quality assurance checks on practices and operators performing the Nuchal Translucency (NT) scan ensure that high standards are maintained by continuing education and audit. Audit involves assessment of NT measurements of each sonographer and examination of their images, from which feedback can be provided on how to improve NT technique if required.

The data can only be submitted for audit if there is a T21 risk calculated. **For patients who have had cfDNA screening (NIPT), the T21 risk needs to be calculated to facilitate audit.**

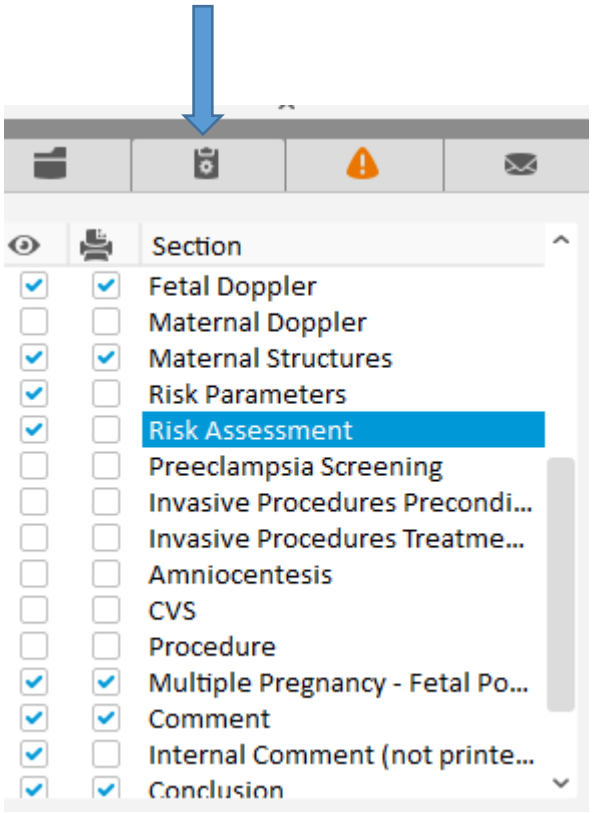
Viewpoint users may calculate the risks for audit purposes only by ticking the boxes at the bottom of the risk calculation page so that risks are not printed in the final report- please see screen shots below.

<u>Viewpoint 5</u>



Viewpoint 6

On the bottom left of the screen you need to click on the 2nd symbol – see arrow.

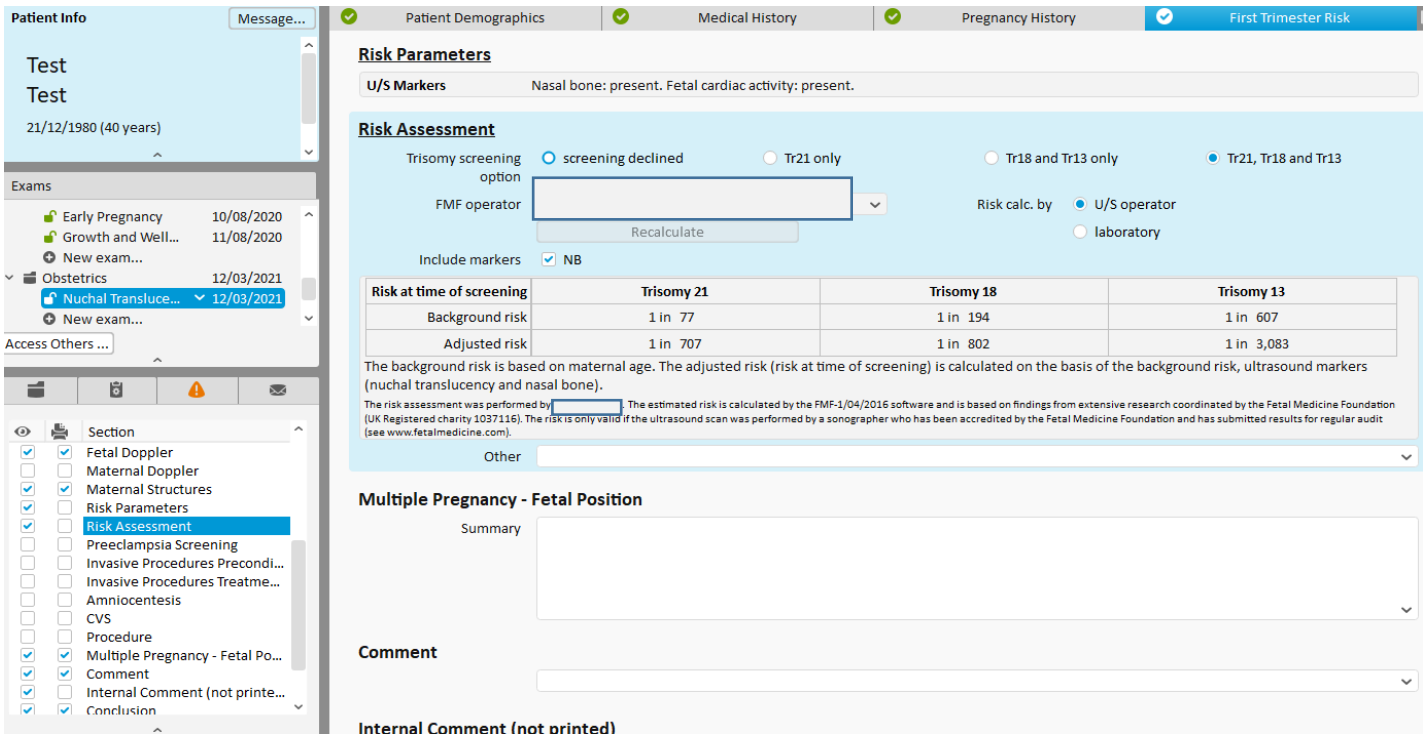


You can then select:

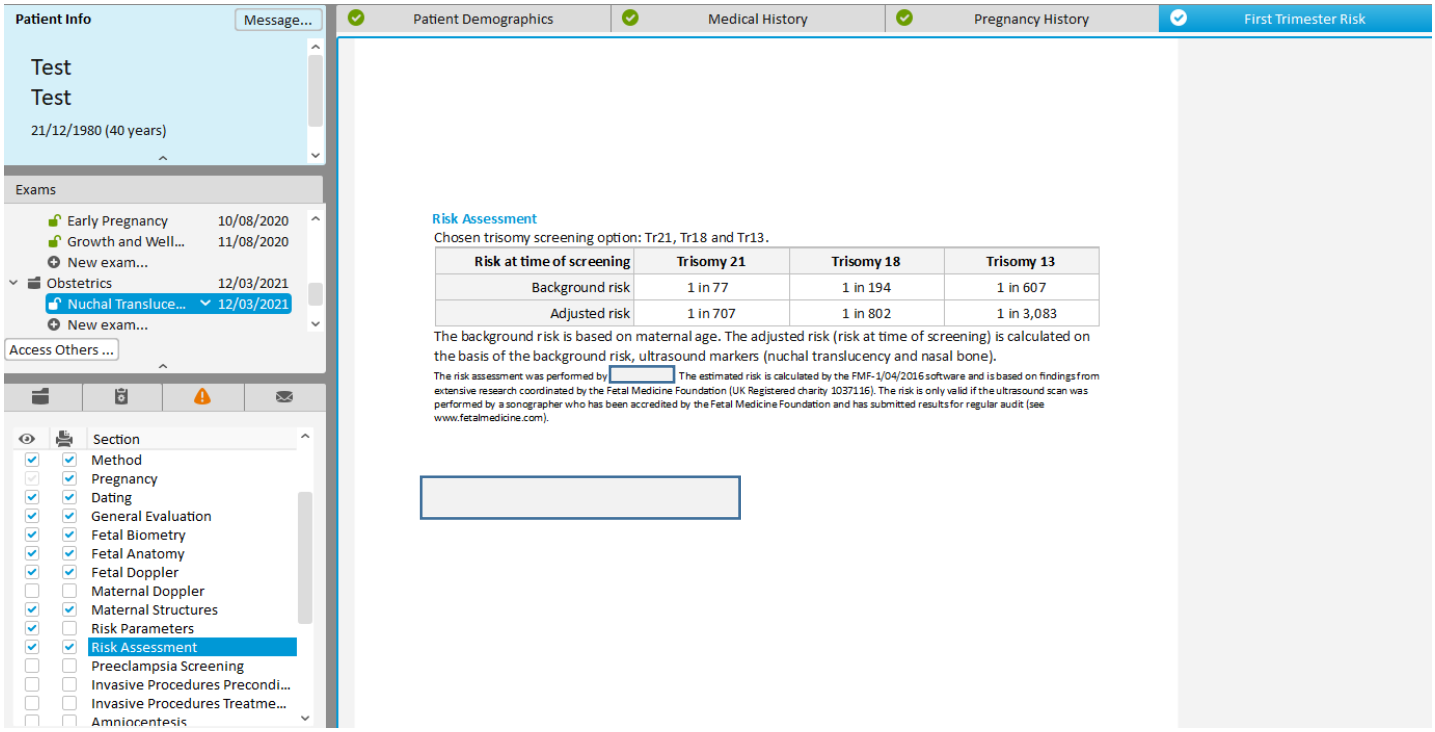
1. Eye symbol- Only the operator can see the risk assessment
2. Print symbol- Both the operator and the printed report will have risk assessment

When using Viewpoint 6 you need to select the eye symbol to be able to calculate the risk assessment for audit. The risk assessment will only show in the report you issue if you select the print symbol – so do not select this if you do not want to give a risk figure, for example if there has been NIPT.

As the eye symbol is selected in the below example, the risk calculation can be performed to enable audit. As the print symbol is not selected, the risk calculated will not be in the report issued.



In this case the calculated risk is to appear in the report – the print symbol has been selected for the risk assessment, and the risk assessment shows in the report issued.



If you use Astraia software, please contact the NTUEMP office to discuss options.